00501

MADE IN THE USA

ramsey electronics inc.

WIN! Monthly Giveaways!
Visit ramseykits.com
See page 50
No purchase required

The 2006 Goodies Are Here!
Plus Over 150 New Products!

New For 2006

Passive Air Band Monitor Receiver

THE HIT FOR 2006! ***Monitor ALL aircraft frequencies without any tuning, and without causing any on-board receiver interference! Great for air shows, pilots, & passenger monitoring!*** *See page 48 for details!*

Synthesized Aircraft Receiver

Rock solid synthesized receiver with digital display and advanced seek/scan functions. Even controls runway lighting on the CTAF channel! *(See page 49)*

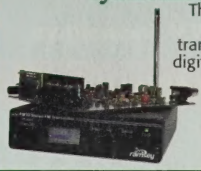
from **$199.95**

Precision Air Pressure Sensor

The most advanced Ramsey kit to date! Precision air pressure and elevation in the palm of your hand! Hi-Res display! *(See page 18)*

from **$239.95**

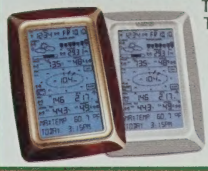
Synthesized FM Broadcaster



The latest generation of Ramsey FM broadcast transmitters! Front panel digital control and display of all parameters! Easy to set up and use! *(See page 3)*

from **$199.95**

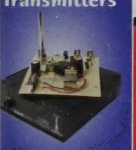
Touch Screen Weather Stations



The latest professional Touch Screen weather stations at a hobbyist price! Recall critical data complete with date/time stamp! *(See page 82)*

only **$329.95**

Electronic Hobby Kits Are Fun!

FM Stereo Transmitters

from **$44.95**

AM Radio Transmitters

from **$34.95**

Laser Light Show

only **$49.95**

Speed Radar Gun

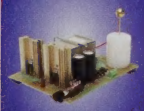
only **$59.95**

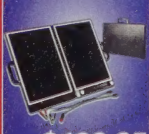
ersonal Guitar Amplifier

nly **$34.95**

Touch Tone Grabber

from **$69.95**

HV Plasma Generator

only **$64.95**

Solar Briefcase Generator

only **$139.95**

www.ramseykits.com

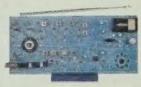
Have Fun AND Learn!

Practical SMT Soldering Course
See page 69

only **$20.95**

Robotic Arm Trainer
See page 57

only **$84.95**

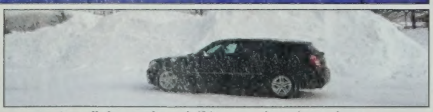
AM/FM IC Radio Course
See page 76

only **$34.95**

Makes Learning And Building Electronic Circuits A SNAP!
Starting on page 71

The 34th Year Of Fun at Ramsey Electronics!

So Why Do Customers Keep Coming Back?

AM/FM Broadcasters	3
Professional LPFM Transmitters	9
Seasonal Hobby Kits	16
Hobby Kits	18
Mini-Kits	43
Transmitters & Receivers	47
Amateur Radio Gear	52
Robotics	56
Educational & Learning	62
Video Cameras & Accessories	77
Neat Stuff	80
Time & Weather	82
Test & Measurement	85
Antennas	91
Tools & Accessories	93
Professional RF Equipment	96



For all those who ask if it snows here in Rochester or who are tired of that nice summer picture above!

☆ Friendly Dedicated People!

Our friendly staff is just like you, interested in neat electronic products! From the CSR's that take your order to the shipping personnel who confirm it, they are dedicated to one thing...your satisfaction!

☆ Easy Ordering!

We've redefined the term 'easy' in regards to ordering! You can order safely and securely 24/7 on-line not only at www.ramseykits.com but at our anchor stores on eBay and Amazon. You will also find a host of on-line resources to assist you with product questions, applications, and user forums to make your visit a pleasure! Beyond the internet you can also call our friendly CSR's toll free and they will answer any questions you may have and quickly guide you through your order. You will also find a convenient mail-in order form in this catalog. They've been there for thirty years and are still used today! All normal credit cards, PayPal, checks, COD, and wire transfers are accepted. Open accounts are also extended to suitably rated firms, organizations, and educational institutions. It really doesn't get much easier than that!

☆ Incredible Tech Support!

We consider our Technical Support Group to be second to none! That's a pretty strong statement, but we have 34 years of satisfied customers to back it up! We feel that buying and building an electronic kit is merely the beginning until that final moment when you turn it on and you see the incredible results of your handywork. Our Tech Support Group handles it all; from parts questions, assembly questions, theory questions, schematic questions, troubleshooting problems, to repair and return procedures. Whether it be a phone call to verify the hookup or an email about a parts value, they are there for you. Likewise for the 24/7 user and technical forums at www.ramseykits.com!

☆ Risk Free Return Policy!

Not sure a kit or product is exactly what you are looking for? No problem! Order it and examine it (but don't build it if it's a kit!) for up to 10 days. If it's not exactly what you expected, return it for a full refund, no questions asked! Curious about the assembly of a product prior to building it? Got you covered there also; all manuals can be downloaded at ramseykits.com!

Digital Synthesized FM Stereo Transmitters

KIT Wired & Tested

- ✔ PLL synthesized for drift free operation
- ✔ Front panel digital control and display of all settings and parameters!
- ✔ Professional metal case for noise-free operation
- ✔ EMI filtering on audio and power inputs
- ✔ Super audio quality, rivals commercial broadcasts
- ✔ Available in kit or factory assembled versions

All The Features You Asked For... PLUS A WHOLE LOT MORE!

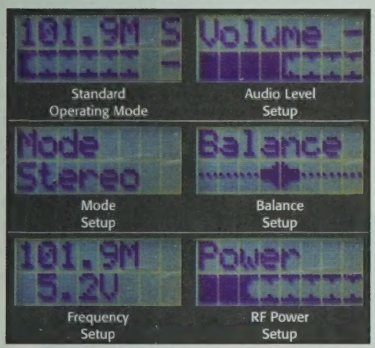
THE LEGACY CONTINUES!

For nearly a decade we have been the leader in hobbyist FM radio transmitters. First we came out with our low cost FM10, the tunable FM transmitter that has set records as the most popular school, scouting, and first time hobbyist kit. Then we introduced the world famous FM25 series of FM transmitters. We took the basic concept of the tunable FM10, made it synthesized for rock solid and stable operation, and gave it the features and performance that made it THE LEADER in low cost FM stereo transmitters. From there we introduced our FM100 series Super Pro FM Stereo Radio Station.

NOW THE BEST OF BOTH WORLDS!

Introducing . . . our brand new FM30 series transmitters! How could we make history better? First, we listened to thousands of our customers who loved the stability of the PLL synthesized FM25 series but wanted easy to change front panel control of the operating frequency and wanted to know what frequency they were transmitting on. They also wanted the capability of controlling the audio levels at the transmitter rather than changing the input levels. We thought those were very legitimate requests, and our response was to move up to the FM100 series. "But I don't need an audio mixer, I don't need all that fancy stuff built-in, I just need a small transmitter I can afford"! Here you go, designed from the ground up...the FM30 series!

SPECIFICATIONS	
Frequency Range:	87.9-108.1 MHz
Power Output:	0-25mW, BNC (FM30B) 0-1.0W, BNC (FM35BWT)
Audio Inputs:	Line level left and right RCA connectors
Controls:	Power on/off
Digital Controls:	Frequency, 256 step audio level, 256 step RF output level, 256 step audio balance, mono/stereo
Setup Digital Display:	Setup frequency, setup audio levels, setup audio balance, setup RF output level, setup mono/stereo, save settings
Normal Digital Display:	Frequency, RF power output, quality of signal
VCO Lock Display:	Front panel LED
Power Requirement:	13.8 to 16VDC, 500mA max
Dimensions:	5.55"W x 6.45"D x 1.5" H



Our RF engineers took it as a challenge and designed not one, but TWO transmitters! The FM30B is designed using through-hole technology and components and is available only as a do-it-yourself kit, with a 25mW output very similar to our FM25 series. Then they redesigned their brand-new design using surface mount technology (SMT) for a very special factory assembled and tested FM35BWT version, with 1W output for our export market! Both are designed around an RF tight vinyl clad metal enclosure for noise free and interference free operation. All settings are done without taking the cover off! Enter the setup mode from the front panel and step through the menu to make all of your adjustments. A two line LCD display shows you all the settings! In addition to the LCD display, a front panel LED indicates PLL lock so you know you are transmitting. Besides frequency selection, front panel control and display gives you 256 steps of audio volume (left and right combined) as well as RF output power. A separate balance setting compensates for left/right differences in audio level. In addition to settings, the LCD display shows you "Quality of Signal" to help you set your levels for optimum sound quality. And of course, all settings are stored in non-volatile memory for future use!

The design includes EMI filters on line level audio and power inputs and a state of the art microstrip PCB inductor to reduce microphonics for the ultimate in alignment free operation. RF output is brought out to a professional, well shielded rear panel BNC connector for a perfect antenna match. Standard RCA connectors are used for left and right line level audio inputs.

Both the FM30B and FM35BWT operate on 13.8 to 16VDC and include a 15VDC plug in power supply. The stylish black metal case measures 5.55"W x 6.45"D x 1.5"H. If you're looking for a super performer without all the features of our FM100 series transmitters, the new FM30B is for you! The FM35BWT can only be shipped outside the USA, or within the US if accompanied by a signed statement that the unit will be exported. *(Note: The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body).*

FM30B	**Digital Synthesized FM Stereo Transmitter Kit, 0-25mW RF Output**	**$199.95**
FM35BWT	**Digital Synthesized FM Stereo Transmitter, 0-1W RF Output, Assembled & Tested, Export Only**	**$299.95**

Super-Pro Synthesized FM Stereo Radio Station

- ✔ **Built-in mixer - 2 line inputs and one microphone input, line level monitor output**
- ✔ **Precision active low-pass "brick wall" audio filter**
- ✔ **Clean, filtered RF output suitable for RF amplification**
- ✔ **Frequency range 88.0 to 108.0 MHz, 100 KHz steps**

The Complete Radio Station... The Pro's Have Chosen For Years!

KIT Wired & Tested

The true professional workhorse of our FM Stereo transmitter line, the FM100B has become the transmitter of choice for both amateurs and professionals around the world. From the serious hobbyist to churches, drive-in theaters, colleges and schools, it continues to be the leader. Not just a transmitter, the FM100B is a fully functional radio station and provides everything but the audio input and antenna system.

This professional synthesized transmitter is adjustable directly from the front panel with a large LED digital readout of the operating frequency. Just enter the setup mode and set your frequency. Once selected and locked you are assured of a rock stable carrier with zero drift. The power output is continuously adjustable throughout the power range of the model selected.

Audio quality is equally impressive. A precision active low-pass brick wall audio filter and peak level limiters give your signal maximum "punch" while preventing overmodulation. Two sets of stereo line level inputs are provided with front panel level control for both. Dual front panel LED bargraph meters provide left and right channel audio level metering. In addition to the line level inputs, there is a separate microphone input with a built-in mic mixer to control the level. Not enough? How about unattended microphone ducking! When enabled, the presence of mic audio automatically reduces and overrides the line level input! Just like the professional units at a fraction of the cost.

The FM100B kit includes an attractive metal case, whip antenna and built in 110/220VAC power supply. A BNC connector is also provided for an external antenna. Check out our Tru-Match FM antenna kit on page 8, it's the perfect mate to the FM100B transmitter.

We also offer a high power, export only kit and/or assembled version of the FM100B that provides a variable RF output power up to 1 watt. The 1 watt unit must utilize an external antenna properly matched to the operating frequency to maintain a proper VSWR to protect the transmitter. The export versions can only be shipped outside the US, or within the US if accompanied by a signed statement that the unit will be exported. *(Note: The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body).*

FM100B	**Super-Pro FM Stereo Radio Station Kit, 5uW to 25 mW Output**	**$269.95**
FM100BEX	**Super-Pro High Power (Export ONLY) Kit, 5uW to 1Watt Output**	**$349.95**
FM100BWT	**Factory Assembled & Tested FM100BEX, 5uW to 1 Watt Output**	**$429.95**

Synthesized FM Stereo Transmitter

KIT

- ✔ **Synthesized 88 to 108 MHz for no frequency drift!**
- ✔ **Simple DIP switch frequency setting!**
- ✔ **Built-in telescoping whip or external antenna operation**

New Design Includes SMT!

Priced like an inexpensive hobby transmitter but performs like a commercial unit! Truly a cut above the rest, and that probably explains why it is the most popular hobby transmitter around the world! The FM25B features a PIC microprocessor for easy frequency programming without the need for lookup tables or complicated formulas! The transmit frequency is easily set using simple board mounted DIP switches. Frequency drift is a thing of the past with PLL control making your synthesized signal rock solid all the time! This is critical for radios with digital tuners. No drift, no noise, right on frequency without any tuning or tweaking! SMT components are preassembled!

Besides the rock stable transmitter, the FM25B features a superb stereo generator providing you with amazingly good stereo separation to keep even the pickiest audiophile happy! Stereo line level audio input with loop out is perfect for connection to your computer using similar stereo 3.5mm mini audio jacks. We also provide an 3.5mm to RCA stereo patch cable for connection to your CD player, tape deck, or mic mixer. Use the built-in whip antenna or use an external antenna with the standard "F" external antenna connector on the rear panel. Just plug it in and you're on the air. Kit comes with the matching case set, whip antenna, 110VAC power adapter, and audio patch cable. Case size 5"W x 1½"H x 5¼"D.

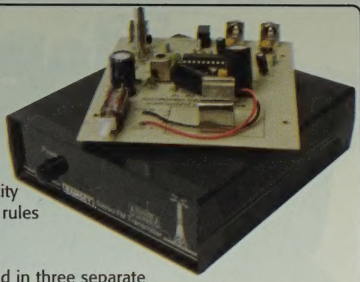
FM25B	**Professional Synthesized FM Stereo Transmitter Kit, adjustable 5 uW to 25 mW Output**	**$139.95**

Tunable FM Stereo Transmitter

KIT

- ✔ **Tunable anywhere in standard FM band... 88 to 108 MHz**
- ✔ **Operates on 5 to 15 VDC**
- ✔ **Settable pre-emphasis 50 or 75 µSec for use anywhere in the world**
- ✔ **Easy to build, low cost transmitter includes matching case set!**

Learn The Basics Of FM Transmitters!



Here is a great entry-level kit that will teach the basics of FM Broadcast transmission while finding many uses around the home or dorm room. The FM10C has plenty of power to cover your home, backyard, or city block. Our manual goes into great detail outlining all the aspects of antennas, transmitting range and FCC rules and regulations.

You'll be amazed at the exceptional audio quality of the FM10C. Tunes through the entire 88-108MHz band in three separate ranges with a tuned LC circuit. Re-broadcast your favorite music commercial-free and with the dynamic range the musician intended, without all that nasty compression the big boys use to make their station sound louder than the competition. Compression produces a noticeably muddier and less dynamic sound. The unit runs on internal 9V battery, external power from 5 to 15 VDC, or an optional 120 VAC adapter is also available. Includes the matching case & knob set for a professional finished look. Case size 5"W x 1½"H x 5¼"D.

FM10C	**FM Stereo Transmitter Kit With Case**	**$44.95**
FMAC	**110 VAC Power Supply for FM10A**	**$9.95**

Professional Synthesized AM Transmitter

KIT

Be As Stable As A Rock!

- ✔ **Fully synthesized, no frequency drift!**
- ✔ **Ideal for schools**
- ✔ **Microprocessor controlled**
- ✔ **Strappable for higher power output where regulations permit**
- ✔ **Includes AC power adapter and case set**

The AM25 is not your ordinary hobbyist AM transmitter! The AM broadcast band is quite alive and well, and is still considered the home of talk radio. For years the AM band has been a popular place for community broadcasts, in-home broadcasts, and other local information broadcasts. Now you can have a professional synthesized AM transmitter at the cost of a hobby unit!

The AM25 operates anywhere within the standard AM broadcast band, and is easily set to any clear channel in your area. The design is similar to that of a commercial radio transmitter, so while you build it you'll learn how the "big guys" operate. It is widely used by schools - standard output is 100mW with range up to ¼ mile, but is jumper settable for higher output where regulations allow. There is no tuning or tweaking involved with the AM25. The PLL synthesized frequency is easily set with dip-switches and is rock solid without any drift, just like our FM25B. This is critical for any digital radio or tuner. The transmitter accepts line level input from any audio source including CD players, tape decks, computers, etc. Includes matching case & knob set and 110VAC power supply. Case measures 5"W x 1½"H x 5¼"D.

AM25	**Professional AM Synthesized AM Transmitter Kit, Case, and AC Power Supply**	**$99.95**

Tunable AM Radio Transmitter

KIT

- ✔ **Tunes entire 550 to 1600 KHz AM band**
- ✔ **Operates on 9 to 12 VDC, includes case set**
- ✔ **Standard line level input with RCA phono jack**
- ✔ **100 mW output. Range up to ¼ mile under optimum conditions**

#1 Scouting Project For Years

The AM1 is a great first kit and a fine low power AM broadcaster for the hobbyist on a budget. It's a great way to learn the basics of AM broadcast technology, not to mention basic soldering and component identification (if you're a beginner!) The transmitter can be tuned to broadcast anywhere in the AM band (550 to 1600 kHz).

Setting frequency is simple - tune a nearby AM radio to the desired frequency, then adjust the AM1 coil to match the radio. With 100 mW of output power, range can be up to ¼ mile. Connect any line level audio source from your CD player, tape deck, or mic mixer to the RCA input on the rear panel of the AM1C. It's that simple and you'll be on the air. The AM1 has been used by Scout camps, churches, schools, and other organizations to provide easy, low cost communications. Includes the matching case and knob set shown. Measures 5"W x 1½"H x 5¼"D.

AM1C	**AM Radio Transmitter Kit With Case**	**$34.95**
C125	**110VAC Power Adapter**	**$9.95**

Phone Patch Mic Mixer

KIT Wired & Tested

Mix Your Phone Line, Microphone, And Music Source!

- ✔ Send telephone call audio over-the-air!
- ✔ Stereo line/microphone/phone line mixer!
- ✔ Automatic gain, automatic noise gating, variable compression!

Ever wish you could broadcast on-the-air telephone calls like the big guys do? Due to popular demand, and probably the most requested kit idea ever received, we came up with the PPM3 Phone Patch Mixer!

This is a perfect match to any of our AM or FM broadcasters! It's easy to plug a music source into any of them but when you want to add a microphone (since you ARE the Disc Jockey of your station!) or you want to put incoming phone calls on-the-air it becomes difficult! Not anymore with the PPM3. All three audio inputs can be easily mixed together and put onto the Line output for feeding into any of our transmitter kits!

SPECIFICATIONS	
Inputs:	Telephone line, RJ11
	Microphone, ¼" phone
	Stereo line level, (2) RCA phono
Outputs:	Line level out, (2) RCA phono
	Telephone line, RJ11
Controls:	Phone line volume
	Microphone volume
	Line volume
	Phone line mute
	Microphone mute
	Power on/off
Indicators:	Power on LED
	Microphone on LED
	Line output peak LED
Power requirement:	9-15VDC 2.1mm adapter plug
Case/knobs:	Included, 9.55"W x 3.65"H x 12.54"D

Simply plug your microphone, phone line, phone handset, and stereo line level program source into the PPM3. Connect the output to your AM or FM broadcaster's line level input and you're all set! Remember that you'll need to speak into your phone's handset or use a speakerphone for the caller to hear you . . . this kit is **not** an expensive hybrid! Separate independent automatic noise gating and automatic variable gain and compression circuits are used for both the telephone line audio and microphone inputs to assure a great sounding line output! The stereo line level mixer features mono injection of phone line and microphone audio for equal balance. Powered by 9-15VDC. Now if people call complaining about YOU, put THEM on-the-air! *(But the way things are going, you'd better have a delay installed!)*

PPM3C	**Phone Line Interface/Mixer Kit, With Case**	**$69.95**
PPM3CWT	**Factory Assembled & Tested PPM3C With Case and Power Supply**	**$99.95**
AC125	**110VAC Power Adapter**	**$9.95**

The Bullshooter-II Digital Voice Storage

KIT Wired & Tested

- ✔ Multiple message storage and selection
- ✔ Full function controls with 7 segment display!
- ✔ Variable output levels to match your equipment!
- ✔ Great for telephone hold announcements, broadcast announcements, and much more!
- ✔ Attractive matching case set included

Feature Packed Digital Storage!

Our BS1 Bullshooter digital voice storage recorder has been very popular to replace tape for basic voice announcements. As the applications have increased, so has the need for additional features. *Consider it done...*with the BS2 Bullshooter II!

The BS2 provides up to 8 minutes of digital voice storage. That can be broken down in a maximum of 8 separate stored messages. The message number is displayed on the 7 segment LED front panel display! Recording/playing/stopping is similar to a standard recorder. You can start/stop/pause your message during both record and playback! Now you can have separate and distinctive messages to fit various applications...or even different sponsors!

The BS2 has a built-in, highly sensitive electret condenser microphone for recording your voice messages. However, you can also plug in an external microphone and even an external line level input for that professional studio sounding recording. External inputs also feature variable level controls to optimize your recording!

Playback-wise, the BS2 features adjustable line level outputs (two mono outputs for stereo inputs) to properly feed any application! This is perfect for telephone system announcements on hold (MOH source), radio broadcasters, transmitters, and audio/visual displays. You can also directly drive a speaker with the built-in amplified speaker output and monitor the levels with the built-in headphone jack. Whatever your application is, the new BS2 has you covered! Runs on 12-15VDC. *(Gee, when you call us, wonder where the voice announcements on hold are coming from?)*

BS2C	**Bullshooter-II, Multi-Message Digital Voice Recorder Kit With Case Set**	**$69.95**
AC125	**110VAC Power Adapter**	**$9.95**
BS2WT	**Factory Assembled & Tested BS2 with Case Set and Power Supply**	**$99.95**

Stereo Transmitter Companion

KIT — Wired & Tested

- ✔ Make your radio station sound like the pros!
- ✔ Limiter/processor for that high density modulation "punch"
- ✔ 3 band audio processor - separate controls for Bass, Presence, and Brilliance

Sound Just Like The Pros!

Your station's image and degree of professionalism are defined by its sound quality. While we can't make your jokes or witty announcing skills any better we can at least make the technical quality the best it can be! The STC1C connects easily between your CD player, mike mixer, or tape deck and the Radio Transmitter. If you like programming Rock music, crank up the Bass and Brilliance controls for some "sock-em" sound, Classical and vocal tunes come alive with a sweetening of the Presence control, monologues, commentaries and talk radio are benefited by Bass and Presence. Set the levels so that the Peak LED flickers a bit and you're assured of perfect modulation without splatter or distortion! Low cost CD players that have poor filtering on the output are really cleaned up by the switched-capacitor low pass filtering in the STC1C. Higher order harmonics and clock feed-through that cause annoying heterodynes and whooshing noises disappear. Operates on 9 to 15 volts DC. Includes the matching case & knob set for a finished look!

STC1C	**Stereo Transmitter Companion Kit With Case**	**$64.95**
STC1WT	**Factory Assembled and Tested STC1C With Case And Power Supply**	**$119.95**
AC125	**110VAC Power Adapter**	**$9.95**

FM Low Pass Filter

KIT — Wired & Tested

"Clean Up" Your FM Broadcasts!

The FM Low Pass Filter kit came about while designing the PX1, Professional FM Broadcaster. FCC Ruling 99–25 created a class of radio stations designed to serve local communities by authorizing new classes of non-commercial, low power FM radio services (LPFM). In order to meet the stringent guidelines of the FCC the PX1 underwent months of design sessions and many hours of painstaking tests. One of the secrets to its clean output is the FMLP1. If you own one of those spectrally dirty "import" exciters you'll definitely want to add the FMLP1 to clean up the output and properly match your power amplifier. Maximum input power is 50 watts. The kit utilizes surface mount chip caps, so you'll need ultra fine solder and a magnifying lamp.

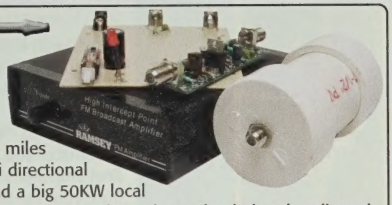
FMLP1	**FM Low Pass Filter Kit**	**$29.95**
FMLP1WT	**Factory Assembled FMLP1 Low Pass Filter**	**$49.95**

High Intercept Point FM Broadcast Amplifier

KIT

- ✔ Virtually overload proof
- ✔ Mast mount for best signal to noise ratio and performance
- ✔ Also works great for low power FM transmitters
- ✔ Put your power at the antenna not in the feedline
- ✔ Very well filtered with 5 sections of low pass filtering

Amplify BEFORE The Line Loss!



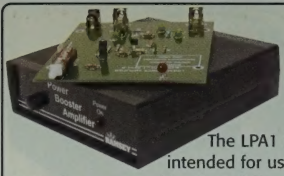
We developed this unit to try and receive a small college station about 35 miles away. Sure, we had a pretty good omni directional FM antenna on the roof, but we also had a big 50KW local AM station about 3 miles away! Any preamp we tried simply overloaded and replicated the strong station all over the band. Our solution was to take our popular broadband LPA1 one watt (!!) amplifier, add lots of low pass filtering and selectivity for the FM band, and put it in a nice weatherproof housing. To make things even easier, we added a power insertion box to feed the DC power up the same coax as the signal! Wow, did it do the job! Then, as an experiment, we tried using it to boost one of our FM transmitters! We couldn't believe the increase in transmission range, and the lowpass filtering made us feel pretty good about not futzing up anyone else's reception! Naturally, this is a no-no in the USA, but great for the export markets. Includes the outdoor PVC enclosure and the matching black case & knob set. Discover the first rule of amplifiers...do it BEFORE the noise, with the FMBA1C!

FMBA1C	**High Intercept Point FM Amplifier Kit With Case**	**$74.95**
AC125	**110VAC Power Adapter**	**$9.95**

Looking For Professional FM Transmitters?

Check out our PX Series FCC Certified FM Transmitters starting on Page 9!

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295



KIT Wired & Tested

RF Linear Power Amplifier

Our Famous Broadband RF Amplifier!

- ✔ Up to one watt output!
- ✔ 300KHz to 1000 MHz
- ✔ Runs on 12-15 VDC

The LPA1 is the ticket for boosting power up to 1 watt over a frequency range of 300 KHz to over 1000 MHz! Although intended for use as a lab amplifier, many users in foreign countries use the LPA1 to boost their Ramsey FM stereo transmitters to a watt of power capable of providing radio service through an entire town. Power required is 12 to 15 volts DC at 250mA via 2.1mm male power jack. Gain of 38dB at 10 MHz, 10 dB at 1000 MHz. Includes the custom matching case & knob set for a neat, professionally finished look. Case size 5"W x 1½"H x 5¼"D.

LPA1C	RF Linear Power Amplifier Kit With Case	$54.95
LPA1WT	Factory Assembled & Tested LPA1 With Case and Power Supply	$119.95
AC125	110VAC Power Adapter	$9.95

FM Broadcast Antennas

The Secret To Maximum Performance, And Great Range!

WHAT'S MORE IMPORTANT THAN YOUR ANTENNA? Antenna height and antenna match are the two easiest things you can do to increase your reception range. The old adage, "If you want more signal, put your money in an antenna rather than power" is certainly true. We feature quite a selection of top quality antennas to fill the bill for any enthusiast's needs - from the hobbyist to the commercial broadcaster serving thousands.

"The 3 most important factors in your broadcast system: Antenna, Antenna, and Antenna!"

The most efficient...and least expensive way to increase your range and signal quality!

For complete information, visit us at www.ramseykits.com

KIT

Tru-Match FM Antenna

Rugged PVC Construction... Keeps The Weather Out!

- ✔ Fully weatherproof - rugged PVC construction
- ✔ Matches 50 or 75 ohm systems
- ✔ Tunable for perfect match over the entire 88 to 108 MHz FM band

We've been besieged with calls asking us where to get a good quality FM Broadcast antenna. Remember, matching your antenna to your transmitter is the single most important link in your transmitter setup - and a good antenna and match are the secret to getting maximum range.

When we say "match" we mean electrical impedance match... if the proper impedances are not maintained between transmitter and antenna, power is reflected away from the antenna and back into the transmitter! This can cause the final amplifier stage to be damaged, not to mention spurious signals and lousy range. Buy this kit and get the most from your FM Broadcaster!

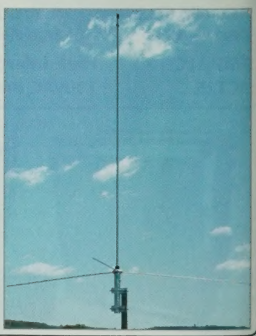
TM100	FM Broadcast Low Power Antenna Kit (25 W Max)	$69.95

5/8 Wave Colinear Vertical FM Antenna

KIT

- ✔ 5/8 wave for excellent gain and maximum range
- ✔ Field adjustable for a perfect match
- ✔ 3.4 dB gain effectively doubles your power!

Precision Tune To Your Exact Frequency For A Perfect VSWR!

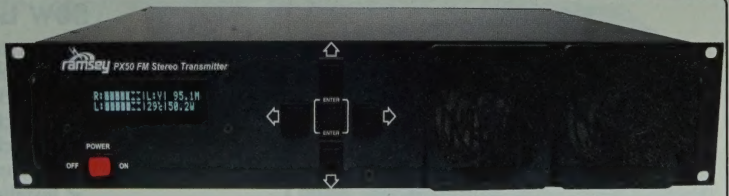


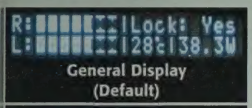
This is probably the most popular antenna we sell. Why? Let's start with the proven omnidirectional ground plane design, clean rugged construction, and how about easy mounting? The 5/8 wave design keeps your signal low to the horizon and not uselessly radiating up into space - great if your listeners are on the space shuttle, but the pits for the folks out at the edge of town! Imagine a donut shaped pattern of signal radiating from your antenna. For the most range out to the horizon, we need to "squish" that pattern flatter to squeeze more signal out - and that's what this antenna does. Super easy to assemble and mounts to any common antenna mast. Has the common SO-239 style connector available anywhere and looks that just can't be beat. Try one and see if you don't agree that it's one heck of an antenna for the money! Height: 7' 7" 200 watt power rating.

FMA200	5/8 Wave Colinear Antenna, 200W Max	$129.95
FMC50	50' Low Loss LMR400 Coax, PL259/Type-N Connectors Preassembled	$125.00
FMC100	100' Low Loss LMR400 Coax, PL259/Type-N Connectors Preassembled	$200.00

50W LPFM Stereo Transmitter

- ✔ 50W RF output, continuous duty
- ✔ FCC Certified under parts 2, 73, and 74
- ✔ Automatic monitoring
- ✔ Automatic VSWR protection
- ✔ Automatic temperature protection
- ✔ Automatic battery backup
- ✔ Digital display of all parameters

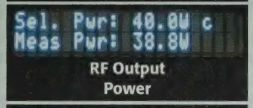




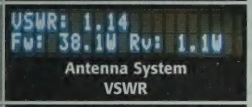
General Display (Default)

RF Frequency

Audio Levels



RF Output Power

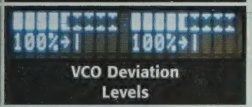


Antenna System VSWR

Stereo/Mono Mode

Internal Temperature

Station ID



VCO Deviation Levels

Option Display

Audio Levels

Controls Locked/Unlocked

Stay On-The-Air With The PX50!

We asked LPFM licensees and users what they really wanted and needed in an FM stereo transmitter. We listened to a lot of current customers already using our very popular PX1 transmitter about features they would like. And we even listened to people using competitive equipment telling us what they really wanted!

What did we hear? You wanted an ultra-reliable transmitter that had automatic protection circuits that would keep you on the air rather than shut you down. You asked for constant diagnostics on all critical circuits and functions. You wanted to use it anywhere in the world, regardless of input voltage or frequency plan. You wanted to have automatic battery backup to eliminate costly standby generators. You asked for more power than 35 watts but wanted it to run extremely cool while remaining extremely quiet. You wanted full digital display of all functions, parameters, settings and alarms. And because of the confusion with the FCC equipment requirements you wanted an *FCC CERTIFIED* transmitter, not just a verified transmitter. You told us what you wanted...*CONSIDER IT DONE!* The PX50 Professional LPFM transmitter, designed specifically to *YOUR* specs!

Operation of the PX50 is simple and intuitive via the front panel navigation switch matrix. All functions, controls, and status are displayed on the 2 line by 20 character vacuum fluorescent display. Installation of the PX50 is a breeze. A standard Type-N connection is provided for RF Output. Balanced (XLR) left and right audio inputs are provided to properly interface with any audio source you have. In addition, BNC SCA/Digital/RDS inputs are provided along with a quick disconnect connector for a 12 VDC standby/back-up power input. In short, connect your audio sources and antenna, power it up, set frequency and power level via the front panel navigation switch matrix, and you're on the air! It doesn't get any simpler!

SPECIFICATIONS

Frequency Range:	87.5 to 108.1 MHz
Primary Power Input:	85-264 VAC, 47-63 Hz; 120-370 VDC
Backup Power Input:	12-14 VDC
Broadcast Modes:	Stereo/Mono + SCA and Digital RDS Inputs.
Bandwidth:	±75 kHz when properly adjusted, auto adjust feature prevents overmodulation.
Separation:	Better than 50 dB (typical 60–70 dB)
Crosstalk:	Better than 50 dB.
Asynchronous:	Better than 60 dB.
THD:	Better than 0.3% with processing.
Audio Inputs:	Standard Balanced Inputs +4 dBu/1.228V rms/3.47 V p-p; -10 to +10 dBm range.
Audio Input Impedance:	22K Ohms
SCA and Digital Inputs:	BNC (50 Ohms)
RF Output:	50W Continuous into a 50 ohm load. Fully adjustable from 1 watt to full power.
Harmonic Suppression:	Better than -81 dBc
Display:	2 lines x 20 characters vacuum fluorescent display.
Controls:	5 navigation controls (Up, Down, Left, Right, Enter)
Cooling:	High CFM Fan, dual filtered front intake, rear exhaust.
Over-Power Protection:	Continuously checks for proper power output to within 5%.
VSWR Protection:	Continuous VSWR monitoring, controlled via Power Reduction On Error and Power Restoration Timer settings.
Over-Temperature Protection:	Auto over-temperature control, 70°C max. fixed, controlled via Power Reduction On Error and Power Restoration Timer settings.
Auto Power Reduction On Error:	Automatically reduces power output to 85%, 75%, 50%, 25% or full disable of set power level.
Auto Power Restoration Timer:	Sets the time interval for automatic error checking to clear reduced power modes and to restore full set power level.
Overmodulation Protection:	Auto control of audio modulation levels, on/off.
Audio Frequency Range:	20 Hz to 16 kHz ±1 dB. Steep "brick wall" 16 kHz low phase shift, low pass filter, down 68 dB @ 19 kHz and above.
Adjustments:	Audio input levels, Modulation Level, Power Level, Frequency (in 100 kHz steps), Stereo/Mono mode, Auto Adjust Modulation mode (On/Off)
Regulatory Approval:	Meets or exceeds FCC 47CFR Parts 15.107(b), 15.109(b); FCC CERTIFIED FCC 47CFR Parts 2, 73, and 74 (ID: PF3PX50)
Dimensions:	Standard 2-unit rack-mount case, 19" wide, 14.25" deep, 3.5" high.
	(Note: The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body)

PX50 **Professional 50W LPFM Stereo Transmitter** **$1995.00**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

New For 2006

50W LPFM Complete Station In-A-Box

- ✔ 50W RF output continuous duty transmitter!
- ✔ FCC Certified under parts 2, 73, and 74
- ✔ Your choice of cases!
- ✔ Your choice of integrated mixers!
- ✔ Your choice of integrated audio production equipment!
- ✔ Antenna and coax included
- ✔ Installed and factory prewired to your configuration!
- ✔ Get on the air quick

New For 2006...
YOUR CHOICE Of Configurations!

LPFM licensees, overseas customers, and municipal customers often need a way to quickly "get on the air" at either temporary locations or in the interim to their installed studio transmitter locations. A number of overseas customers also had to originate short term programming from various remote origination sites for disaster preparedness broadcasts! In fact, a number of PXB's were immediately deployed to the Hurricane Katrina areas to broadcast instructions and disaster relief information! Well, there you go...a Radio Station In A Box! Each PXB is factory prewired and tested, and ready to go on the air the moment it is received!

The PXB50 became extremely popular last year and continues to be the quick and easy Station In A Box to get you on the air quickly. As all PXB50 series packages the PXB50 features our FCC Certified PX50 transmitter which is packed with automatic features to keep you on the air 24/7. Check out the specs on page 9. Although extremely popular, customers frequently requested additional features. So we took their suggestions, sat down with our production engineers, and developed a new series of PXB packages to meet all of your requirements!

First, for road transport use a dual shock impact case was frequently requested. Consider that done with the addition of a new 8 and 12 rack unit dual shock insulated road case. The original non-shock impact 6 rack mount case is still available for stationary applications.

Next issue was the ability to play multiple format audio sources, play MP3's, record CD's on standard CD-R/RW format (not audio formats!) and to provide local speaker outputs for audience and studio speaker connections. Our engineers took a long look at these requests and came up with a nice assortment of suitable equipment to complement the PXB series. Each piece of equipment and each combination was installed in new cases and burned in for several months to assure ultimate uptime reliability in regards to RF and heat. Only problem? Not everybody's needs are the same so we decided to provide two common PXB configurations as well as a bare-bones RF only package so you can customize your own audio production equipment.

We designed two brand new "loaded up" configurations based on our customer's most frequent requests. But we also offer the next generation of PXB's in new RF-only configurations that provide JUST the transmitter mounted in the case of your choice, together with the antenna, microphone and cable. This allows you to configure your own station by selecting individual components from our individual selection of audio products or use your own existing equipment! At Ramsey, we try to make it easy for you!

The PXB51 is the first of two next generation PXB's for 2006. To survive rugged road travel and deployment we installed it in a high impact resistant, shock isolated, 8 unit rack case. Unlike the original PX50, the new case is literally a rack case shock suspended within a case, made for the toughest abuse you can put it through!

Now Available In Multiple Configurations To Meet YOUR Needs!

From there, by adding the Tascam CC222MKII we added not only the ability to play CD's, CD-R's, and CD-RW's but also gave you the ability to RECORD CD's directly on standard CD-R/RW blank media! A bi-directional professional cassette player is also provided that features direct one-touch dubbing from cassette to CD-R or vice versa! To give you the maximum audio performance possible we included the Tascam AV452 professional audio/video production mixer/amplifier. This is unique in that it provides 4 separate microphone inputs as well as a 5th input that can be touch switch selected to any one of 5 standard unbalanced audio sources. This is perfect for an additional tape deck, DVD player, Walkman, personal MP3 player, or any other stereo audio source. On top of all this, a built-in 100 watt stereo amplifier drives local speakers for room audio. As in all PXB configurations, a professional dynamic microphone, desk stand, and a 25' XLR microphone cable are also included. All of this is prewired and tested and is ready to use the moment it's received!

Then we addressed those looking for the complete "live origination" packages; we introduce the PXB52! To start with, to allow room we used a 12 rack unit high impact resistant shock isolated case. For the ultimate in live origination we installed a Tascam X15 8 channel DJ audio mixer. This gives you virtually any audio input capability in a well respected DJ fader format.

We kept the extremely popular CC222MKII CD recorder/player but added a single rack unit MP3/CD/CD-R/CD-RW player to give you the capability of playing MP3 files, giving you hours of music or program material on one optical CD! Then we added a single rack unit 30 watt audio power amplifier to give you an output for local speakers. If you're looking for the ultimate in program source compatibility with a professional DJ style mixer, the PXB52 is your answer! Just like the PXB51, all of this is prewired and tested prior to shipment!

For those wishing to customize their own "station" we also provide the RF-only versions of the PXB. These include our extremely popular PX50 FM Stereo Transmitter installed in your choice of an 8 or 12 rack unit, high impact resistant, shock isolated road case. We also provide our standard antenna and coax as described below. From there you can browse our full line of audio and production accessories on the following pages, or use your own equipment to complete your "station".

Then, just like the PX50, the brand new PX51, PX52, and the RF-only PXB51B and PXB52B all include our FMA200 5/8 Wave omnidirectional FM antenna with 100 feet of low loss LMR400 coaxial cable with matching connectors. Just imagine... show up, open the case, plug in the AC power, temporarily mount the antenna, connect the coax, plug in the microphone, and you're all set and on the air! The applications are endless. From live remotes to commercial station backup transmitters, the new PXB Series is your answer! *(Note: The end user is responsible for complying with all FCC rules & regulations within the US, or any regulations of their respective governing body).*

PXB50 FM STEREO TRANSMITTER IN A BOX

PX50 FCC Certified FM Stereo Transmitter
PAC750 Superscope CD/Cassette player multi channel mixer, 4 rack units (see www.ramseyelectronics.com for details)
FMA200 5/8 Wave 3.4dBi gain FM antenna, easy to install and tune to your frequency, 100' LMR400 low loss coax
All installed in a standard 6 rack unit road case, provided with a broadcast quality dynamic microphone and XLR cable

PXB51 PRODUCTION FM STEREO TRANSMITTER IN A BOX

PX50 FCC Certified FM Stereo Transmitter
AV452 Tascam integrated audio mixer amplifier with 100 watt built-in amplifier, see page 13 for details
CC222 Tascam CD/CD-R/RW/Cassette Integrated recorder/player, see page 14 for details
FMA200 5/8 Wave 3.4dBi gain FM antenna, easy to install and tune to your frequency, 100' LMR400 low loss coax
All installed in an 8 rack unit shock isolated road case, provided with a broadcast quality dynamic microphone and XLR cable

PXB52 LIVE ORIGINATION FM STEREO TRANSMITTER IN A BOX

PX50 FCC Certified FM Stereo Transmitter
X15 Tascam DJ audio mixer, 8 channels, see page 12 for details
CC222 Tascam CD/CD-R/RW/Cassette Integrated recorder/player, see page 14 for details
CD01U Tascam CD/CD-R/RW/MP3 single rack unit player, see page 14 for details
PA30 Tascam 30 watts per channel stereo power amplifier, see page 13 for details
FMA200 5/8 Wave 3.4dBi gain FM antenna, easy to install and tune to your frequency, 100' LMR400 low loss coax
All installed in an 12 rack unit shock isolated road case, provided with a broadcast quality dynamic microphone and XLR cable

PXB50	**Standard FM Stereo Transmitter In A Box, 110VAC Operation**	**$3995.00**
PXB51	**Production FM Stereo Transmitter In A Box, 110VAC Operation**	**$4495.00**
PXB52	**Live Origination FM Stereo Transmitter In A Box, 110VAC Operation**	**$4995.00**
PXB51B	**Basic FM Stereo Transmitter In A Box, RF Only, 8 Rack Shock Isolated Road Case**	**$2895.00**
PXB52B	**Basic FM Stereo Transmitter In A Box, RF Only, 12 Rack Shock Isolated Road Case**	**$2995.00**

Note: 220VAC/50Hz export versions available on special order, contact Ramsey for ordering information

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

Tascam X15 DJ Professional Mixer

- ✔ 8 stereo channel sources, 6 line level, 2 phono
- ✔ 2 mic inputs, one front panel XLR/TRS combo
- ✔ 4 channel mixer
- ✔ 3-band EQ per channel
- ✔ Fader start on all four channels
- ✔ Balanced XLR and unbalanced RCA master outputs
- ✔ Replaceable VCA crossfader
- ✔ Booth & record outputs with level control
- ✔ Selectable headphone output with level control
- ✔ Front panel 12V light output
- ✔ 19" rack mounted, 4 rack units high

NEW! *Value Packed Professional Results!*

If you're looking for a truly professional yet inexpensive multi-input mixer for your FM broadcast station, the Tascam X15 is the answer. We have searched out all professional mixers for just the right one for our professional FM customers. Easy to use, easy to set up, and most importantly, rugged to withstand portable "haul around" applications. The Tascam X series DJ mixers ranked as number 1 in our choice...and in our testing! We have made these mixers integral components in our PXB series of FM Stations-In-A Box.

The X15 is your value packed mixer that provides 8 stereo channel sources that are front panel selectable from 6 line level and 2 phone inputs. Any combination of these inputs has full level control, EQ, cue and fader controls on the front panel. In addition, there are two selectable microphone inputs that also feature EQ and on/off front panel control. A unique combination XLR/TRS balanced input connector on the front panel for the main microphone is ideal for direct plug in gooseneck mics as well as standard microphone cables without having to access the connector panel. A user replaceable cross-fader mixes from the A-B sources, and dual LED bargraph meters display master program output levels. If you are looking for even more deluxe features to jazz up your production capabilities, check out the X17 below. In addition to the features above, it features effects, audio sampler with pitch control, and numerous additional inputs, outputs, and features. Operates on 110VAC power supply included. 220VAC/50Hz available as a special order. For full specifications, visit our website at www.ramseyelectronics.com.

X15	**Professional DJ Audio Mixer**	**$299.95**
3R9580	**Replacement Cross-Fader**	**$24.95**

Tascam X17 DJ Pro Effects Mixer

- ✔ 8 switchable stereo channel sources
- ✔ 4 switchable line phono or line, 4 dedicated line
- ✔ 2 mic inputs, one front panel XLR/TRS combo
- ✔ 3 bank audio sampler with pitch control
- ✔ Front panel compact flash card for store & record
- ✔ Effects send and return
- ✔ Separate stereo AUX input with level control
- ✔ Discrete aux output
- ✔ Booth dimmer
- ✔ 4 channel mixer
- ✔ 3-band EQ per channel
- ✔ Fader start on all four channels
- ✔ Balanced XLR and unbalanced RCA master outputs
- ✔ Replaceable VCA crossfader
- ✔ Booth & record outputs with level control
- ✔ Selectable headphone output with level control
- ✔ 19" rack mounted, 4 rack units high

NEW! *Audio Sampler, Store/Record, Effects...And More!*

OK, so you're looking for not only the best value packed professional mixer available, but you want even more features! Consider it done with the Tascam X17! As we described above, we searched out a LOT of mixers to include with our FM transmitter systems, and the X15 was the winner for value and performance. But then we evaluated, tested, and burned in the X17 and our jaws dropped! Stereo Inputs are expanded to provide 4 selectable line level/phono inputs as well as 4 dedicated line only inputs. If you are going to have numerous line level sources (tape decks, CD players, DVD players, etc, these additional inputs will certainly come in handy.

It doesn't stop there. Unique to the X17 is the high tech audio sampler circuit. This provides 3 banks of audio samples that can be stored and played back from its internal memory. Plus, there is a front panel slot for a standard compact flash card to store and retain your sample audio tracks. Front panel selectable source inputs, pitch, and level is provided. Additional features include a separate stereo AUX input and output, booth dimmer, EFX send and return, separate record outputs, and much more. For only a few bucks more you get all these additional features. The X17 really represents today's technology at a truly affordable price. Operates on 110VAC power supply included. 220VAC/50Hz available as a special order.

X17	**Professional Deluxe DJ Audio Mixer With Effects**	**$499.95**
3R9580	**Replacement Cross-Fader**	**$24.95**

Tascam AV452 A/V Mixer Amplifier

- ✔ 5 channel with level, EQ, and faders
- ✔ 4 microphone inputs with phantom power
- ✔ 100 watt built-in audio amplifier
- ✔ Balanced line out, unbalanced monitor out
- ✔ Automatic microphone ducking
- ✔ XLR and screw terminal mic connections
- ✔ RCA unbalanced line level inputs
- ✔ RS232, RS422, RS485 serial control
- ✔ Relay control connector (DB37)
- ✔ Aux video switching
- ✔ "Learning" full function IR remote control
- ✔ 19" rack mounted, 3 rack units high
- ✔ And a whole lot more!

NEW!

Multiple Selectable Aux Inputs, 100W Amplifier Out, And Much More!

One of the most common requests we've had for our FM Station-In-A-Box configuration has been to provide a high power audio output to directly drive local speakers. This is popular for local setups, meetings, and other events. Whether it's for the DJ at a club, a Town Meeting, or a disaster recovery application, the FM transmitter gets the signal out there but what about the group of people on site? Meeting that need brought the additional need for multiple audio inputs that could easily be connected to anything from a Walkman to a cassette deck or CD Player. Just like the X series mixers on page 12, we searched and searched and found the EXACT match for what was needed!

The Tascam AV452 is primarily designed to be a "presentation A/V mixer amplifier", however it perfectly matches the Station-In-A-Box application! Plus it does a whole lot more. There are 4 microphone inputs that can be connected via standard XLR or wire screw-on connectors. This makes it easy to connect in the field. On top of that, each input has the capability of providing phantom power for the latest electret condenser microphones. Each microphone input has own level, EQ, mute, and over-level LED indicator. The neatest feature is the 5th input. There are 5 separate stereo balanced inputs that can be selected for that 5th input. That means you can have a CD player, cassette deck, or Walkman plugged in that merely need to be selected and then faded in. It really doesn't get much easier than that.

Besides both balanced and unbalanced line level outputs it also provides a hefty 100 watt per channel audio output for local speakers! Amps can be configured for stereo or mono bridge, and have enable/disable touch switches on the front panel! If you're looking for a super-agile mixer/amplifier in one unit for your FM station or your portable Station-In-A-Box, the AV452 is the perfect choice.

Besides the application for our FM broadcast stations, the AV452 also switches video, S-Video, and VGA video input, and has advanced presentation features including intercom, cascade inputs, serial control, relay control, IR advanced learning remote control, and much more. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications, visit our website at www.ramseyelectronics.com.

AV452 **Professional A/V Mixer Amplifier** **$699.95**

Stereo Audio Power Amplifier

- ✔ 30W per channel stereo
- ✔ 60W bridged mono
- ✔ Balanced XLR and unbalanced RCA inputs
- ✔ Front panel headphone jack
- ✔ Small single rack unit height

NEW!

Small Size, High Power Output To Drive Local Speakers!

As mentioned above, the most common request by our FM transmitter customers was to provide a quality studio monitor. Besides an integrated mixer amplifier (AV452 above) we felt a separate audio amplifier was needed for those with different configurations lacking a built-in amplifier. Again we searched, and once again Tascam had the solution! The PA30 is a professional, high peformance audio power amplifier for nearfield studio monitoring and sound reinforcement. It delivers 30 watts continuous per channel (60 watts bridged mono) into an 8 ohm load with less than 0.05% total harmonic distortion. What's great about the PA30 is that it features BOTH balanced XLR stereo inputs as well as unbalanced RCA stereo inputs! That makes the connections simple and universal! Automatic electronic protection circuits shut down the amplifier if there is an overload, short circuit, DC offset, or other problem to prevent damage to the amplifer. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications, visit our website at www.ramseyelectronics.com.

PA30 **Professional Stereo Audio Power Amplifier** **$199.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

CD Recorder - Cassette Combo Deck

- ✔ Records and plays standard CD-R and CD-RW's!
- ✔ SPDIF coax and optical digital I/O!
- ✔ Copy protection recording
- ✔ RIAA phono input for turntables
- ✔ Bi-directional cassette deck
- ✔ ±12% pitch control on cassette deck
- ✔ Unbalanced RCA I/O for CD-R deck
- ✔ Headphone out with level control
- ✔ Auto dub from cassette to CD-R/CD-RW
- ✔ Auto dub from CD-R/RW deck to cassette
- ✔ 19" rack mounted, 3 rack units high
- ✔ Much, much more!

The Ultimate! Plays Cassettes, Plays CD's... AND RECORDS CD'S!

Dubbed by Tascam as *"The World's Only CD-RW & Cassette Combination Deck"*, the CC222MKII is the miracle answer to the FM broadcaster! First of all there is the obvious need for both a CD player and a cassette deck to support your program material sources. But having separate units takes space, takes connections, and quite often that's an option you don't have. Now, in only three rack units, you can have BOTH! A professional bi-directional cassette deck as well as a professional CD player! But wait, it goes even further! What if the CD player also RECORDS CD's on STANDARD CD-R and CD-RW format? Now THAT is the best of all worlds!

The CC222MKII provides all the playback functions of cassette, commercial CD, CD-R and CD-RW media. Professional cassette features include ±12% pitch control, bi-directional transport, Dolby B noise reduction, return to zero, record mute, repeat modes and much more. The professional CD-R/RW deck features a 24 bit digital to analog and analog to digital converter, sampling frequency converter, manual and automatic track divisions, one-touch fade in's, finalize, erase, edit, and a whole lot more. Multiple inputs provide for any combination from digital direct to dub pass-through. Recorded CD's can even be copy protected as FREE (can be copied), 1 GEN (single generation copies only), and PROH (copy prohibited)!

In addition to source recording on CD-R's, CD-RW's, and cassettes you can also directly DUB from cassette to CD-R/RW or CD-R/RW to cassette with one touch dubbing with direct pass through audio! Auto track creation-division is selectable for CD-R/RW's based on cassette audio pauses! SPDIF digital inputs and outputs are provided for BOTH coaxial and optical. Analog inputs and outputs for cassette, CD-R/RW, and both are provided via standard unbalanced RCA connectors. RIAA phono input with ground is also provided eliminating the need for an external phono preamplifier. What else can be said? A lot, but it's difficult to cram the information from the 38 page operating manual into this space so check our website at www.ramseyelectronics.com for full details and specifications. Operates on 110VAC. 220VAC/50Hz available as a special order.

CC222MKII **Professional CD Recorder-Cassette Combo Deck** **$799.95**

Professional CD-MP3 Player

NEW!

- ✔ Plays CD's, CD-R/RW's, and MP3's!
- ✔ 20 second RAM buffer for shock protection
- ✔ SPDIF optical digital output
- ✔ Unbalanced RCA analog outputs
- ✔ ±12% pitch control
- ✔ Key Original mode to change speed without pitch
- ✔ RS232 serial control
- ✔ One 19" single rack unit

When You Need It All... In ONE RACK UNIT!

The CD01U is considered the newest, the latest, and the greatest optical disk player available today and it only occupies one rack unit of space! Now that is hard to believe! One of the biggest drawbacks of standard CD's is that they are limited to 80 minutes of content. Plus, in today's world a LOT of programming is delivered in MP3 format. Both these problems are solved with the CD01U! Not only does it play commercial audio CD's (CD-DA), but also plays CD-R's, CD-RW's, and MP3 audio files! For everybody from the DJ to the producer, the advanced features of the CD01U will make your job of a professional sounding production a breeze.

Advanced features include ±12% pitch control, speed without pitch control, auto ready, auto cue, call, track programming and editing, fade-in, fade-out, time switching, event start/stop, and much, much, more! Analog stereo unbalanced outputs are brought out to standard RCA connectors for simple connections. In addition an optical SPDIF digital output is provided. RS232 serial control is also provided and is fully compatible with AMX and Crestron remote programming equipment. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications, visit our website.

CD01U **Professional CD-MP3 Player, Single Rack Unit** **$499.95**

COAXIAL DYNAMICS, INC.

RF DIRECTIONAL WATTMETERS

81000A SERIES

MODELS 81000-A/81001-A

The Model 81000-A Wattmeter...now you can measure RF power in 50 ohm coaxial cable and transmission lines, and accept plug in elements in the range of 0.1 to 10000 watts full scale, and from 0.45 to 2300 MHz.

Complete with a built-in line section, our "Quick Match" RF connectors for 50 ohm cables and transmission lines offer the speed and reliability you expect from Coaxial Dynamics.

The 81000-A is easy to use. Simply connect the wattmeter between the power source and antenna or "dummy" load, plug in the appropriate measuring element and select forward or reflected direction. The RF power is visually identified directly on the 4½" three scale display.

Versatile and strong. The model 81000-A can be used with accessory cables up to 200' from the meter and is protected by a rugged, virtually indestructable shock-proof housing. For added convenience, two sockets for storage of additonal elements are located on the back of the unit.

Utilizing three computer generated scales along with superior taut band technology, our high quality meter delivers reliable and accurate readings, plus the integrity that satisfies both the US Navy and Canadian standards for bounce and vibration. This is your assurance of complete confidence.

The 81001-A RF Wattmeter, identical to the 81000-A, has the added feature of an auxiliary DC input, providing the option of single meter measurement of several power sources. Line sections (eg, P/N 88525) are permanently installed at these measurement points, with model 81001-A connected to each as needed. The DC signal is coupled from the line section to the auxiliary DC input to provide the same measuring capabilities as the basic model 81000-A.

*For more information on the Model 81000-A series Panel Mounted Wattmeters, WATTKITS and accessories consult factory.

CHECK THESE DISTINCT ADVANTAGES

FOR ACCURACY

- ☑ Shock Mounted "Taut Band" Meter
- ☑ 4½" Mirrored Scale

FOR VERSATILITY

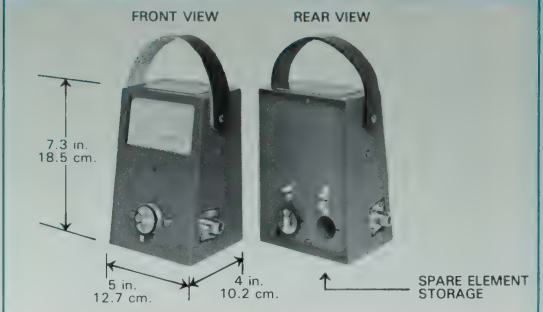
- ☑ Quick Match Connectors
- ☑ Internal Line Section

FOR DURABILITY

- ☑ Hi Con Plated Plug-In Elements
- ☑ 2 Year Limited Warranty

Coaxial Dynamics, Inc. 15210 Industrial Parkway
Cleveland, Ohio 44135 (216) 267-2233
Toll Free 1-800-COAXIAL (262-9425)
FAX: (216) 267-3142

COAXIAL DYNAMICS, INC.



Specifications:

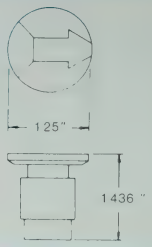
MODEL 81000-A & 81001-A

Power Range .....100 mW-10 kW
Frequency Range .....0.45-2300 MHz
VSWR .....1.05:1 max., with N connectors
Accuracy .....±5% of full scale
Impedance .....50 ohms
RF Connectors .....Type N(F) Standard
Other "Quick Match" Connectors are available. See 88000 Series Below
Weight .....3.6 lbs. (1.6 kg.)
Element Weight .....1.25 oz. (.035 kg.)

SCHEDULE (1)

STANDARD ELEMENTS (CATALOG NUMBERS)

Power Range	Frequency (MHz)						
	2-30	25-60	50-125	100-250	200-500	400-1000	950-1300
5 watts		82012	82020	82028	82036	82045	82068
10 watts		82013	82021	82029	82037	82046	82069
25 watts		82014	82022	82030	82038	82047	82070
50 watts	82004	82015	82023	82031	82039	82048	82071
100 watts	82005	82016	82024	82032	82041	82049	82072
250 watts	82006	82017	82025	82033	82042	82050	82073
500 watts	82007	82018	82026	82034	82043	82051	
1000 watts	82008	82019	82027	82035	82044	82052	
2500 watts	82009						
5000 watts	82010						
	MODEL NUMBERS						



SCHEDULE (2)

MILLIWATT ELEMENTS

100 mW	Cat. No.	250 mW	Cat. No.	500 mW	Cat. No.
20-23 MHz	820A022	70-80 MHz	820B075	25-30 MHz	820C028
44-50 MHz	820A047	72-76 MHz	820B074	65-90 MHz	820C078
62-70 MHz	820A066	105-120 MHz	820B113	72-76 MHz	820C074
74-76 MHz	820A075	310-350 MHz	820B330	105-120 MHz	820C113
105-120 MHz	820A113	416-436 MHz	820B426	130-170 MHz	820C150
135-165 MHz	820A150	800-900 MHZ	820B850	300-350 MHz	820C325
190-205 MHz	820A198	900-950 MHz	820B925	800-900 MHz	820C850
310-350 MHz	820A330			900-950 MHz	820C925
416-436 MHz	820A426				
740-760 MHz	820A750				
800-900 MHz	820A850				

SCHEDULE (3)

LOW POWER ELEMENTS

1 watt	Cat. No.	2.5 watts	Cat. No.
28-44 MHz	820D036	60-80 MHz	820E070
40-50 MHz	820D045	80-140 MHz	820E110
44-70 MHz	820D057	95-150 MHz	820E123
70-120 MHz	820D095	150-250 MHz	820E200
108-118 MHz	820D113	200-300 MHz	820E250
108-181 MHz	820D145	225-400 MHz	820E313
150-250 MHz	820D200	275-450 MHz	820E363
200-300 MHz	820D250	340-560 MHz	820E450
275-450 MHz	820D363	800-900 MHz	820E850
310-350 MHz	820D330		
327-543 MHz	820D435		
425-850 MHz	820D638		
800-950 MHz	820D875		

NOTE: Special elements other than those listed can be custom designed, contact you local distributor or Coaxial Dynamics, Inc. for more information.

88000 Series RF Quick Match 50 ohm Connectors

88000	N Female	88010	7/8" Swivel Flanged
88001	N Male	88011	TNC Female
88002	BNC Female	88012	TNC Male
88003	BNC Male	88013	HN Female
88004	UHF Female	88014	HN Male
88005	UHF Male	88020	SMA Female
88006	LC Female	88021	SMA Male
88007	LC Male	88026	Miniature UHF Female
88008	C Female	88027	SC Female
88009	C Male	88028	SC Male

FOR MORE INFORMATION CALL TOLL FREE 1-800-COAXIAL (262-9425)

Coaxial Dynamics, Inc. 15210 Industrial Parkway Cleveland, Ohio 44135 (216) 267-2233 Toll Free: 1-800-COAXIAL (262-9425) FAX: (216) 267-3142

Professional Single Well Cassette Deck

- ✔ Dolby B and C noise reduction
- ✔ Dolby HX Pro headroom extension
- ✔ 2 heads
- ✔ Intro check and record mute
- ✔ 19" rack mounted, 3 rack units high

Professional Quality... At A Consumer Price!

The most widely used source for LPFM broadcasting is audio cassette. They have been around a long time and are still heavily used throughout the industry. Quite often the FM broadcaster is forced to use a consumer cassette deck for his program source. Sure, they work, but they often experience track alignment problems, poor audio response, and the headlife is poor at best. After all, consumer units are made for occasional playback and not for everyday use! Now you can have a super professional rack mounted cassette deck for close to the cost of these consumer units!

The 102MKII single well deck is the best value and choice for broadcasters, musicians, schools, and theaters for cassette playback and recording. Dual heads are provided for erase and record/playback. Front panel display includes dual peak level meters, tape counter, transport mode indicators, record/play indicators, CD sync indicator, and pause indicator. Record mute records 4 seconds of silence between your audio "tracks" to allow automatic music search functions of most cassette players. Intro check scans through the entire tape playing a short section at the beginning of each "track" allowing you to find the track you're searching for. Front panel input level and balance controls are provided as well as a standard headphone monitor jack. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications, visit our website at www.ramseyelectronics.com.

102MKII **Professional Single Well Cassette Deck** **$319.95**

Professional Dual Well Cassette Deck

- ✔ Dual well simultaneous recording
- ✔ Bi-directional transports
- ✔ High speed dubbing
- ✔ Dual front panel microphone inputs
- ✔ Dolby B and C noise reduction
- ✔ Dolby HX Pro headroom extension
- ✔ Intro check and record mute
- ✔ Continuous play modes
- ✔ CD Synchro mode
- ✔ 19" rack mounted, 3 rack units high

Professional Playback, Simultaneous Recording, and Dubbing In One Unit!

The 202MKIII took all the professional features of the 102MKII above and added the features and convenience of fully independant, dual well, bi-directional tape transports! That's right, in the same 3 rack unit high package! Unlike a lot of consumer dual well decks, the 202MKIII features the ability to record your program audio simultaneously in both wells to create two masters! Normal 1X and high speed 2X dubbing is also provided with direct audio pass-through. Like the single well version above, Dolby B and C noise reduction are included as well as Dolby HX Pro headroom extension. Electronic tape counters, peak level meters, and all mode indicators are included in the large front panel display.

In addition to line level recording, the 202MKIII features two separate front panel microphone inputs for on-the-spot stereo recording of live interviews, and other audio material. Standard unbalanced line level inputs and outputs are brought out to the rear panel via RCA connectors. In addition, a CD synchro input allows CD synchro dubbing to cassette-2 from a properly equipped CD player. Like the 102MKII above, record mute records 4 seconds of silence between your audio "tracks" to allow automatic music search functions of most cassette players. Intro check scans through the entire tape playing a short section at the beginning of each "track" allowing you to find the track you're searching for. If you're looking for the advanced features of a professional dual well cassette deck, the value and performance of the 202MKIII can't be beat. Operates on 110VAC. 220VAC/50Hz available as a special order. For full specifications visit our website at www.ramseyelectronics.com.

202MKIII **Professional Dual Well Cassette Deck** **$399.95**

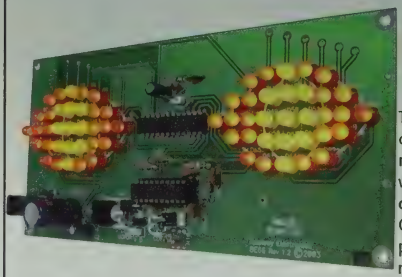
Customize Your PX Series FM Transmitter To Meet Your EXACT Specs!

See page 10 and build it up from there...

ALL AT A SPECIAL SYSTEM PRICE!

Halloween Goodies

Give Them A Thrill They Will Never Forget!



KIT

A Real Eye Catcher!

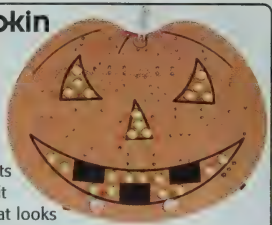
Blinky-Eyes Animated Display

- ✔ Blinking Eye display of 66 super bright LEDs!
- ✔ Microprocessor controlled
- ✔ Changes brightness with ambient light levels
- ✔ Animated with constant motion!

The ultimate animated LED kit that will dazzle you and delight your friends! Uses a microcontroller to randomly select from many different animations such as a long pause before a wink, or a twinkle of the eye to startle passers-by. A perfect kit if you want to light up a costume, window, or pumpkin with a scary repertoire of modes! Four modes to satisfy any enthusiast's desires: 1. Off for long random periods, then blinks or winks. Designed to scare! 2. On for long periods before performing an animation, perfect for costumes and displays! 3. Animates all the time for constant motion, perfect display attention-getter. 4. Random fire! When placed in a pumpkin will light the pumpkin like there is a fire within! Truly awesome! As if this weren't enough, the BE66 can also control a small hobby motor to shake bushes at random intervals or signal an external player to make a scary sound! Also has a CDS cell to sense light. In one mode, the display will dim as it gets dark for battery operation, and in the other it will turn off when it's too bright, so it plays only in the dark! *(No boring, do-nothing twinkle kit here! You have to see it to believe it!)*

BE66 **Blinky-Eyes Animated Display Kit** **$59.95**

LED Halloween Pumpkin



- ✔ 25 bright LED's!
- ✔ Random flash like a candle!
- ✔ Super bright illumination LED!

Spook Them With LEDs!

You won't be scraping the seeds and guts out of this pumpkin! Six transistor circuit provides a neat random flash pattern that looks just like a flickering candle. Then a super bright LED illuminates the entire pumpkin with a spooky glow! Runs on a standard 9V battery (not included). Includes an edge mounted on/off slide switch. From Velleman.

MK145 LED Halloween Pumpkin Kit KIT **$9.95**

Animated Ghost

- ✔ Automatically greets your visitors!
- ✔ Responds to sudden noises
- ✔ Built-in microphone
- ✔ Adjustable sensitivity

Moves, Shakes, Blinks!

KIT

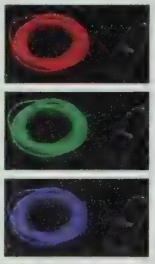
Who says there aren't such things as ghosts? Once your friends come upon this one they'll think differently! The unique circuit board design includes two ominous blinking eyes that change with various conditions, including sudden changes in ambient noise. A highly sensitive built-in microphone picks up anything from noises to talking and makes the ghost dance with its built-in motor, make eerie sounds with the built-in speaker, and randomly blink. A white cloth and a hanger are included as shown to make it look like the real thing. Runs on on 2 AAA batteries. From Velleman.

MK166 Animated Ghost Kit NEW! **$23.95**

Portable EL Electroluminescence

- ✔ 3.3 feet long!
- ✔ Low power consumption!
- ✔ Highly visible brilliant colors

Wired & Tested

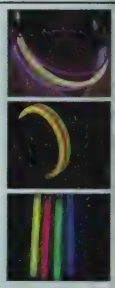


Steady Or Flash!

Electroluminescence illuminated flexible wire sets can be used for a lot of things but when they're battery powered they're perfect for Halloween and Trick or Treat safety concerns! Each thin, flexible EL wire set is 3.3' long and runs on two standard AA batteries (not included). Current consumption is less than 100mA for long life. Mode settings include steady glow and slow or fast flash! Make it part of a brilliantly lit, custom designed costume or simply add it for illuminated safety while Trick or Treating in the dark. From Velleman.

NWRR15 EL Illumination Wire Set, Red **$19.95**
NWRG15 EL Illumination Wire Set, Green NEW! **$19.95**
NWRB15 EL Illumination Wire Set, Blue **$19.95**

Colored Bright Light Sticks



- ✔ Easy to activate!
- ✔ Safe and non-toxic!
- ✔ Long glow time

Wired & Tested

No Power Required!

Light sticks, the latest craze! Snap them to life and they brilliantly glow for hours! Light sticks come 4 to a pack, mixed colors. Bracelets come 3 colors to a bracelet, 6 bracelets per package. The popular necklaces come 2 colors per necklace, 24 necklaces per package. Extremely safe and easy to activate. The sticks have built-in hooks for easy hanging. Kids love them! From Velleman.

VDLILPP1 Light Sticks, 4-Pack **$4.95**
VDLILPP2 Light Stick Bracelet, 6-Pack **$4.95**
VDLILSNL Light Stick Necklace, 24-Pack **$26.95**

Holiday Time Animations

Bring Holiday Cheer To Even The Worst Scrooge!

LED Santa Display

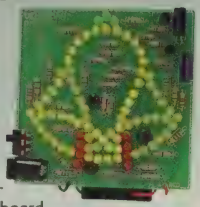
- ✔ 126 LED animated display!
- ✔ Multi color!

Here Comes Santa!

What a way to welcome the holiday season and learn about electronics at the same time! This animated Santa and reindeer display has 126 dazzling colored LEDs to make a really nice holiday sign. Runs on 9-12VDC so you can use a standard 9V battery or an external power supply so it can be left on continuously. Includes an on/off switch. Measures 3.2" x 5.7". From Velleman.

MK116 Animated Santa Display Kit KIT **$19.95**
AC125 110VAC Power Supply **$9.95**

Animated Holiday Bell



- ✔ 83 LED animated motion!
- ✔ Multiple colors!

Swings Back And Forth!

83 LEDs provide a really good looking holiday bell that swings back and forth! Multiple green, red, and yellow LEDs provide the bell with a festive holiday spirit the moment you see it! A PC board mounted on/off switch and standard power connector are included. Runs on 9-12VDC or a standard 9V battery (not included). Measures 3.2" x 3.5". From Velleman

MK122 LED Animated Bell Kit KIT **$13.95**
AC125 110VAC Power Supply **$9.95**

3D LED Christmas Tree

KIT

- ✔ Free standing 3D design!
- ✔ 16 flashing LEDs!
- ✔ Customize with Extra LEDs!
- ✔ Can be hung on the tree!

Dazzle Your Friends!

This Christmas Tree is not your average PC board display! It has 4 "branch" sections giving it a 3D depth look! Its unique design holds a standard 9V battery at its base as its "trunk" and will self-support on a table or desk with or without the battery. 16 flashing red LEDs are placed on the branches. Extra green and yellow LEDs are included to allow you to customize your tree to your design! Runs on 9-12VDC or the 9V battery (not included) in its base. Measures 3.5" x 4.0". From Velleman.

MK130 3D LED Christmas Tree Kit **$7.95**
AC125 110VAC Power Supply **$9.95**

LED Christmas Tree

- ✔ 134 LED blinking tree!
- ✔ Random blinking candles!

Light Up Your Tree In Style!

This beautiful electronic Christmas Tree consists of 134 bright LEDs! With the tree are 18 randomly blinking candles to give the tree an exciting animated look! Runs on 9-12VDC or a standard 9V battery. Use an external power supply and leave it on continuously! Includes a PC board mounted on/off switch. PC board measures 5.6" x 3.2". From Velleman.

MK117 LED Christmas Tree Kit KIT **$17.95**
AC125 110VAC Power Supply **$9.95**

SMT LED Snowman Pin

NEW!

- ✔ 2 Blue LED's
- ✔ 3 Red LED's
- ✔ Magnet mount

Wired & Tested

Display The Spirit!

Display the holiday spirit with this cute little flashing LED snowman! Wear it on your clothes or attach it to any metal surface with the built-in magnet mount. This little guy has two high intensity blue LEDs and three high intensity red LED's that really draw attention to him! SMT construction is utilized, and like the MK142 it makes a great starter kit to learn SMT. The snowman measures 1.4" high and runs on two CR927 button cells, not included. From Velleman.

LFB1 SMT LED Flashing Snowman Pin Kit **$2.95**

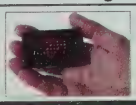
SMT LED Christmas Tree

- ✔ Alternating flashing 6 SMT LEDs!
- ✔ Great attention grabber!
- ✔ Learn SMT over the Holidays!

Wear A Flashing Tree!

Build this subminiature Christmas Tree and watch it alternately flash red surface mount LEDs! Small enough to wear as a badge or pendant, or to hang on the tree. Six high intensity SMT LEDs brilliantly light up this tree. People will be amazed seeing the actual components on the tree while it flashes. Plus you can tell them you built it! SMT components are used throughout the kit to give you a great start in surface mount. We know they are smaller than small, so as always we include extra parts in case you lose or damage any. Runs on one Lithium Ion button cell. Make sure to check out the magnifiers on page 95. Measures 1.75" x .3". From Velleman.

MK142 SMT LED Christmas Tree Kit KIT **$9.95**



Create Your Own Graphic Animations On A Badge!

See our VM112 on Page 81

New For 2006

High Resolution Air Pressure/Elevation Sensor

Measure Elevation To A Third Of An Inch And Air Pressure In Nine Formats!

- ✔ Pressure resolution greater than 0.0001kPa!
- ✔ Super elevation resolution better than 1/3"!
- ✔ 128 x 64 pixel graphical display!
- ✔ Shows realtime elevation & pressure changes!
- ✔ USB computer interface for easy data transfer!
- ✔ 13,824 samples of FLASH storage available!
- ✔ Small coat pocket size
- ✔ Special pilots menu
- ✔ Multiple built-in alarms
- ✔ Settable offsets for pressure and elevation
- ✔ Uses standard or rechargeable AA batteries
- ✔ Simple graphical menu based operation

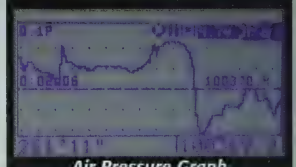
"The Most Advanced Ramsey Kit To Date!"

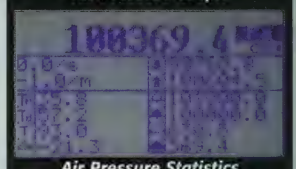
THE ULTIMATE PRODUCT FOR THE SERIOUS AND THE CURIOUS!

We really did it this time! The UP24 is one of our most advanced kits to date, and an absolute MUST for anyone serious about the environment around us! But the applications only begin there. The unique design allows unprecedented super high resolution measurements and display of absolute atmospheric air pressure.

Elevation Graph

Elevation Statistics


Air Pressure Graph



Air Pressure Statistics

ELEVATION TO A THIRD OF AN INCH!

I have written a lot of catalog pages and a boatload of specification sheets but this one is a challenge because the applications are endless and the performance characteristics are beyond description! The UP24 senses ambient air pressure and critically calculates elevation with unheard of precision! Using a highly sensitive sensor and 24-bit A/D converter in a special noise-immune design, less than 1/3" of an inch of elevation resolution is achieved! YES, we said 1/3 of an inch! This high accuracy and resolution opens the door to a host of sophisticated environmental air pressure monitoring applications.

AIR PRESSURE IN ANY FORMAT!

Unlike your normal run-of-the-mill barometer, air pressure is sensed in Pa's or kPa's. What are those you may ask? Pascals or KiloPascals. However, don't be afraid, for your convenience, and to fit any application you may have, it is also displayed in millibars, bars, PSI, atmospheres, millimeters of mercury, inches of mercury, and feet of water! Take your pick! The range of the UP24 is 15kPa to 155kPa. That also means:

- ✓ 15000 to 155000 Pascal's
- ✓ 150 to 1550 Millibars
- ✓ 0.15 to 1.55 Bars
- ✓ 2.175566 to 22.48085 Pounds per square inch
- ✓ 0.1480385 to 1.529731 Atmospheres
- ✓ 112.5093 to 1162.596 Millimeters of mercury
- ✓ 4.429498 to 45.77148 Inches of mercury
- ✓ 5.02 to 51.9 feet of water

THE HI-RES REALTIME ATMOSPHERE SENSOR!

Gradual pressure changes, like a barometer, can show you gradual changes in the weather. Instantaneous high sensitivity changes in air pressure can show you a whole lot more! Weather-wise, high resolution pressure changes can be used to anticipate and even estimate related wind gusts and speeds. This together with "on the fly" pressure changes will give you the upper hand in weather monitoring. Part of ARPS *(Advanced Regional Prediction System)* is to obtain and analyze realtime data to provide a prediction system for weather components. The UP24 is ideal as a source for highly accurate realtime data.

But what if the air pressure changes that are ever so slight are sensed and recorded? You have the perfect ultra reliable sensor and heart of an alarm for a building. When I first heard this I questioned it. Then the engineering staff said "watch this..." A hundred feet from the main entrance of Ramsey they called the front receptionist and asked her to open the front door to the building. WOW! An immediate change in air pressure registered on the UP24! From an open door, to a broken window, to wind damage, it's all detected and recorded in the UP24! The built-in alarm settings can be set for high or low limits to trip other equipment.

Unparalleled Accuracy And Resolution... Beyond Belief!

THE ULTIMATE ELEVATION METER!

We've talked about air pressure, now let's talk about elevation! The incredibly precise 24 bit A/D converter in the UP24 looks at the air pressure and converts it to elevation above sea level. Once again, there I was standing in the engineering office watching the LCD graph. The text at the bottom of the screen said *472' 3"*. I said yea, so what? They said raise it up a few inches and watch. As I raised it the display constantly changed...*472', 8"*; *473' 1"* and so on. I couldn't believe it. The following day I took it to a tower site where I knew the ground elevation and it was dead-on... *1701', 6"*. Not only did I have the text display of the elevation but a chart graph of the elevation history!

The applications for the super accurate elevation meter are endless. From watching and recording elevations during hiking trips to measuring and recording the wave heights on boats! Let your imagination take over from there!

SPECIAL AIRCRAFT MODE!

What about aircraft? Needless to say, as a handheld device measuring air pressure aircraft applications are limited to un-pressurized cabins, but the UP24 provides valuable flight assistance in such cabins and smaller aircraft. In fact, a special "Pilots Mode" is included in the menu to set a min/max altitude window setting to use in conjunction with the built in alarms!

LOCAL OFFSETS & ALARMS...NO PROBLEM!

To accommodate site variances, offsets for pressure, elevation, and related hysteresis are also provided as a menu selected operation. Likewise, both high and low alarms can be enabled and set over a wide range of lows and highs for both pressure and elevation!

SMALL, LIGHTWEIGHT, THE SENSOR OF YOUR DREAMS!

While the UP24 is small enough to be kept in your coat pocket it boasts a large 2.78" x 1.53" 128x64 pixel LCD display screen making viewing easy. Display modes include both realtime pressure and elevation graphs as well as pressure and elevation statistics. There are 12 user selectable sample rates from 1/10th of a second all the way up to every 15 minutes.

What if you're in the field and you want to save data captured in your UP24? No problem there either! The built-in FLASH storage provides 13,824 samples of storage. That's equivalent to 3 hours and 50 minutes at the 1 second sample rate! When you get back you can transfer your data to your PC with a standard USB interface. Routinely updated interface software is available at our website 24/7!

Does all of this sound too good to be true? It comes close! And it all fits in a small handheld case that measures 5.5" x 3.6" x 1.5" and weighs slightly over half a pound with batteries. Runs on three standard AA Alkaline batteries or the optional external power supply. You can also use rechargeable NiCAD or NiMH AA batteries which will be charged automatically when the external supply is plugged in! If you're looking for the finest air pressure and elevation sensor, check out the UP24, truly a marvel in the industry!

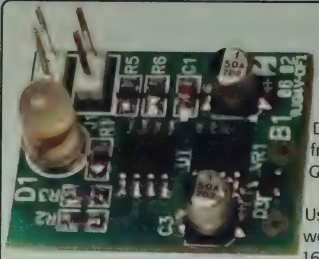
SPECIFICATIONS:

Pressure Range:	15kPa to 155kPa
Pressure Units:	KiloPascals, pascals, millibars, bars, pounds per square inch, atmospheres, millimeters of mercury, inches of mercury, feet of water
Elevation Range:	-1,000 feet to 44,300 feet (-308.4 to 13,504 meters)
Elevation Units:	Feet/inches, meters, kilometers
Display Modes:	Pressure graph, pressure stats, elevation graph, elevation stats
Resolution:	Better than 1/3 of an inch (8.5 mm)
Sample Rates:	12 selectable rates: 1/10 sec, 1/5 sec, 1/2 sec, 1 sec, 10 sec, 15 sec, 30 sec, 1 min, 5 min, 10 min, 15 min
Offsets:	Selectable pressure, elevation, pressure hysteresis, elevation hysteresis
Offset, pressure:	14kPa to 114kPa in 1/10Pa increments
Offset, elevation:	-3,298.4' to 45,639.4' in 0.1' increments
Offset, pressure hysteresis:	0Pa to 10Pa in 0.1Pa increments
Offset, elevation hysteresis:	0' to 32.8' in 0.1' increments
Alarms menu:	Low and High Pressure, Low and High Elevation, low/high on/off
Alarm, high pressure:	100kPa to 114kPa in 0.1Pa increments
Alarm, low pressure:	14kPa to 100kPA in 0.1 increments
Alarm, high elevation:	158.6' to 45,639.4' in 0.1' increments
Alarm, low elevation:	-3,298.4' to 45,639.4' in 0.1' increments
Storage:	13,824 samples or 3 hours 50 minutes at 1 second sample rate
Pilot elevation window:	0.0' to 45,639' in 0.1' increments
User interface:	Single rotary/momentary push knob with graphical drop down menus, power push on/push off
Computer interface:	USB 2.0
Utility menu, calibrate:	-1,000Pa to 1,000PA in 0.1PA increments
Utility menu, resets:	Reset stats, reset chart data, reset to default settings
Display:	LCD, 128W x 64H pixels Viewing Area: 2.78"W x 1.53" H (70.7mm x 38.8mm) Dot Pitch: 0.02" W x 0.02"H (0.52mm x 0.52mm) Dot Size: 0.019" W x 0.019"H, (0.48mm x 0.48 mm)
Power Requirements:	Battery: 3x Alkaline AA, 3x AA NiCAD, 3x NiMH (internal charger for NiCad and NiMH batteries); External: 2.0 to 15 VDC at 20mA, standard 2.1mm jack; USB2.0: standard USB power
Color:	Black
Dimensions:	5.5"L x 3.6"W x 1.5"H, (139.5mm x 91.4 mm x 38.1mm)
Weight:	Less than 0.6 lbs, 0.27 kg including batteries

UP24	**High Resolution Air Pressure/Elevation Sensor Kit**	**$239.95**
UP24WT	**High Resolution Air Pressure/Elevation Sensor, Factory Assembled & Tested**	**$299.95**
AC125	**110VAC Power Adapter/Charger**	**$9.95**

SMT Multi Color Microprocessor Blinky

KIT



Learn SMT With The Latest Technology LEDs!

- ✔ Bright full color LED, red, green, and blue element
- ✔ 8 Pin Microcontroller
- ✔ Operates from 6 VDC to 12 VDC
- ✔ Extra SMT components are included!

Don't let the old title "blinky" scare you away from this marvelous little kit! It was originally designed as a way to show off the latest technology in RGB (Red, Green, Blue) full color LEDs while providing kit builders with a fun and economical SMT practice kit.

Uses PWM methods to generate any color with a simple 8-pin microcontroller, with switchable speed selection as well! The dual jumper control system tells the microprocessor what scanning speed is desired for a full cycle of 16,777,216 possible colors from the LED! It randomly selects different color scanning modes to wow any observer to the point of distraction. This little attention getter is fun to build and has loads of possible applications. The SBRGB is a perfect attention getter for sales displays, name badges, and beanies. Operates from 6VDC to 12VDC and will run continuously on a standard 9V battery for several days! And if you're new to SMT technology, don't worry, we include extra SMT components to cover your mistakes! You may wonder why you would pay 30 bucks for a blinky kit! Wait till you see the LED smoothly change colors in front of your eyes!

SBRGB1 **SMT Multi Color Microprocessor Blinky Kit** **$29.95**

High Intensity SMT Blinky Kit

KIT

- ✔ Super bright SMT LEDs
- ✔ Subminiature board, perfect for displays
- ✔ Operates from 6 VDC with included cells
- ✔ Learn SMT the FUN WAY!

Super Bright... Super Small!

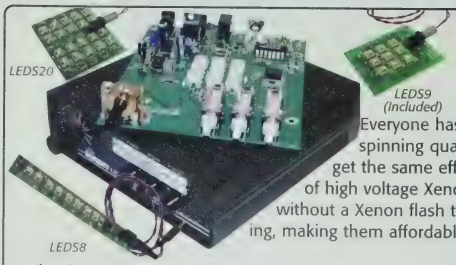
What can be said about a Surface Mount blinky kit? The BL2 is the revival of our classic BL1 blinky kit in a new, modern form! Yes, two LEDs that blink, just like our original blinky kit that has made us famous, but this one is sub-miniature and designed with SMT components! Why, you ask? Besides the obvious, a really neat, super bright attention grabbing display, there's no better way to learn how to work with SMT components! Don't worry; we even include spare SMT chips for when you goof up!

When complete, the BL2 provides alternating super bright red and blue LEDs. Runs on 6VDC, and we include two LR55 button cells and a cell holder to mount on the backside of the board. It's one complete unit! If you don't want SMT LEDs you can also use regular T1¾ LEDs (included). If you want to learn what SMT is all about, the BL2 is for you! While you're at it, you might want to check out the magnifiers in our tools section on page 95. You'll need them! *(You'll definitely want to keep your reading glasses handy when you build this one!)*

BL2 **High Intensity SMT Blinky Kit** **$17.95**

High Power LED Strobe Light

KIT



Dance To the Beat!

- ✔ Everlasting LEDs won't burn out!
- ✔ Variable flash rate or audio trigger!
- ✔ Bass or treble trigger modes!
- ✔ Use as a stroboscope for stop action effects!
- ✔ Safe low voltage construction-no high voltage or fragile Xenon tube to break!

Everyone has seen Xenon stroboscopes "stop" a spinning quarter or flash to music. Now you can get the same effect without the expense and hassle of high voltage Xenon tubes! That's right, a strobe without a Xenon flash tube to break! The price of super bright LEDs keeps falling as their light output keeps increasing, making them affordable for everything from traffic signals to vehicle tail lights... and now flashing strobe lights!

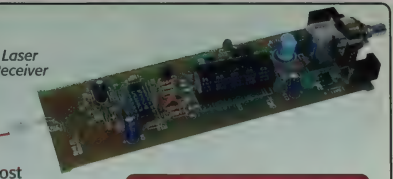
A plug-in 3x3 array of super bright Telux™ LEDs creates a brilliant sharp flash similar to a Xenon flash tube. The LEDs can also be mounted directly on the main PC Board if desired. In the standard flash mode, a variable rate control varies the flash frequency from approx 1 to 220 flashes per second. In the audio sync mode the flash is triggered by any audio input you provide into the standard RCA audio input connector. Built-in low and high pass filters allow you to select either bass or treble music triggering! An external trigger in/out connector lets you connect multiple units together for simultaneous flash. Optional plug-in display boards with 8 or 20 LEDs are available for even more strobing power! Just imagine surrounding your room with a few of these, triggered to your stereo! Runs on 12-15 VDC, and unlike the high voltage Xenon strobes of the past, the LEDS1 is safe for the kids to build! Includes a matching custom case and knob set to give your strobe light a great finished look. The plug-in display boards may be mounted on top of the case, or remotely located. Be one of the first to experience the new high output LEDs!

LEDS1C	**High Power LED Strobe Light Kit With Case**	**$44.95**
LEDS8	**Display Board, Inline Array Of 8 LEDs**	**$17.95**
LEDS20	**Display Board, 5x4 Array Of 20 LEDs**	**$29.95**
AC125	**110VAC Power Supply**	**$9.95**

Laser Beam Audio Communicator

KIT

- ✔ **Modulated at more than 16kHz for excellent voice audio fidelity**
- ✔ **Uses standard pocket laser module for ¼ mile maximum range (included)**
- ✔ **Each kit includes one transmitter and one receiver**
- ✔ **Includes microphone and digital AGC circuit for full audio range control**



Now you can talk to your friends over one of the most secure long-distance transmission types available, a laser beam! Our new laser beam communicator allows you to talk with pretty good fidelity to your friends up to ¼ mile away just using a pocket laser pointer.

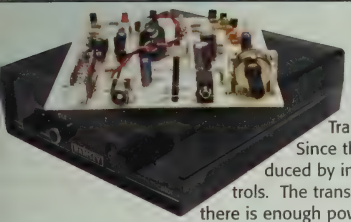
Send Audio Over That Laser Beam!

The transmitter uses a microphone or external audio to modulate a laser beam on and off at a rate of more than 16kHz so the audio fidelity is much better than that of a telephone. A telephone is limited to 3kHz; the LBC6K is limited to 6kHz. The receiver includes filtering to remove the 16kHz carrier and leave behind the high quality audio, and then boost the level for use with earphones. To improve the fidelity of the system the transmitter employs audio AGC on the microphone to boost weak audio, and reduce loud audio so that the listener never misses a word Each kit includes a transmitter and receiver, and pocket laser pointer. This gives you a complete one-way audio path. If you need full duplex, or two way, buy two at the special price! Receiver and transmitter are designed to fit in two pieces of 2" PVC pipe for easy mounting and alignment. Each runs on a standard 9V battery, DC adapter or AC adapter (not included). Audio output drives a standard personal stereo headset. Your friends will be amazed when they see you talking over that red laser beam! *(My kids built a couple of these, and were really amazed! But then they asked me why they couldn't see their voice change the laser beam light...I told them...um...ask your Mom!)*

LBC6K	**Laser Beam Communicator Kit (Includes Receiver, Transmitter and Pocket Laser Pointer)**	**$39.95**
LBC6K2	**TWO Laser Beam Communicator Kits, for Duplex or Two-Way Audio** *(Save $5.00!)*	**$74.95**

Light Beam Communicator

KIT



Voice Over An IR Beam!

- ✔ **Send your voice over light - even through windows!**
- ✔ **30' to ¼ mile range!**
- ✔ **Receiver drives a speaker or earphone!**

Transmits a modulated infrared light beam up to 30 feet without lenses, up to ¼ mile using simple lenses. Since the beam is modulated with a 30 KHz carrier (like AM radio) there is no effect from 60 Hz hum that is produced by indoor lighting. Easily transmits through windows - ideal for "bugs" or listening to IR television remote controls. The transmitter can use any type of mike and is very sensitive. The receiver employs an IR PIN diode detector and there is enough power to drive any loudspeaker or earphone.

The PC board is cleverly "scored" so you can easily separate the Transmit and Receive sections so they can be used individually to transmit at one location and receive at another. Units run on 9 to 12 VDC and will use a standard 9V battery.

The LB56 has been a popular kit for years, and a leading science fair project to show how you can send audio over Infrared! Comes complete with the custom case & knob set shown to give your project a great finished look. Case size: 5"W x 1½"H x 5¼"D.

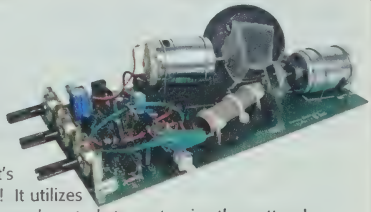
LB56C	**Light Beam Communicator Kit With Case**	**$29.95**

Laser Light Show

KIT

- ✔ **Audio input modulates pattern!**
- ✔ **Adjustable pattern and speed**
- ✔ **Projects neat motorized patterns**
- ✔ **Uses safe plastic mirrors**

True Laser Beam Patterns... With Audio Modulation!



You've probably seen a laser show at concerts or on TV. They're pretty impressive to say the least! Knowing that you can't afford a professional laser display we challenged our engineers to design one that's neat and easy to build, yet inexpensive. Well, the result is the LLS1 Laser Light Show! This thing is sweet! It utilizes two small motors and a small standard laser pointer as the basics. Then we gave it variable pattern and speed controls to customize the pattern!

Not enough, you say? How about a line level audio input to modulate the pattern with your music? You bet! Everything is included, even the small laser pointer. And to make the kit absolutely safe we used plastic mirrors instead of glass that could break! Runs on 6-12 VDC or our standard 12VDC AC Adapter (not included). If you're looking for a fun and neat little laser kit, the LLS1 is for you!

LLS1	**Laser Light Show Kit**	**$44.95**
AC125	**110VAC Power Supply**	**$9.95**

Dazzling Music Lights KIT

A Dazzling Display Of Light!

- ✔ Control 3 channels X 300 watts of lights
- ✔ Lights flicker to music: Low, Mid, High
- ✔ Runs on 120 VAC

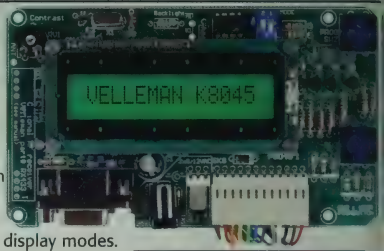
See music come alive! Three different lights flicker in time to music, one light each for low, mid, and high frequencies. Each is individually adjustable, runs on 120 VAC and controls up to 300 watts per channel - enough to drive spotlights, Christmas lights, mood lights, strip lights, and more! Speaking of mood light, this will really crank up your next party! So create your own light show just like the rock concerts and Vegas shows in your own home. Includes the matching case & knob set shown to give your music lights kit a great finished look.

ML1C	**Music Lights Kit With Case**	**$34.95**

Programmable Message Board KIT

- ✔ Includes backlit LCD display!
- ✔ Serial interface!
- ✔ 8 inputs!
- ✔ Non-volatile EEPROM memory!
- ✔ No programming skills needed!

Add A High Tech Display To Your Own Project!

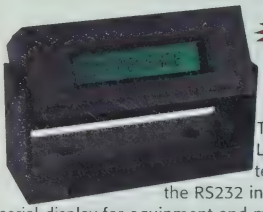


If you have never experimented or used an LCD message display, this kit is for you! You can use this as a stand-alone display that is remotely programmed or as an integral display for one of your own projects! With a very nice supertwist backlit 16 character LCD display you can provide alphanumeric displays in four display modes.

DISPLAY MODES
1. Display the status of all inputs simultaneously
2. Display all active inputs
3. Display active input with highest priority
4. Display text messages in a "tickertape" display

There are 8 separate inputs and each input accepts dry contacts, open collectors or logic levels. The non-volatile EEPROM memory can store up to 9 sixteen character messages! A default message can be displayed to signal that no inputs are active. RS232 interface is based on 2400/N/8/1 with no handshaking to make for a simple interface. Message transfer software is available online to transfer messages from your PC to the message board. Messages can be recalled by a simple pushbutton. This is the perfect kit to get your hands dirty with alphanumeric displays and their control circuits. It's fun, you learn, and you have a really great display when it's built! Board measures 4.9" x 2.9" x 1.2". If you're looking for a really nice finished display, order the custom case/bezel kit. From Velleman.

K8045	**Programmable LCD Message Board Kit**	**$49.95**
B8045	**Custom Enclosure With Matching Bezel**	**$29.95**



NEW!

Create Your Own Message!

LCD Mini Message Board KIT

- ✔ 124 character Eprom message memory
- ✔ Built-in editor
- ✔ RS232 interface

This is a neat litte kit that comes complete with the attractive tilting enclosure and mount. A 16 character 1 line backlit LCD display shows everyone your custom message! The built-in Eprom message memory handles up to 124 characters. The message scrolls with adjustable speed. The message can be created with the built-in message editor or via the RS232 interface for simple uploading and displaying. This little kit is perfect for exhibitions, advertising, greeting messages, serial display for equipment and much more. Runs on standard 9VDC battery at 100mA. Case measures 4.5" x 1.7" x 3". RS232 software available at our website, www.ramseykits.com. From Velleman.

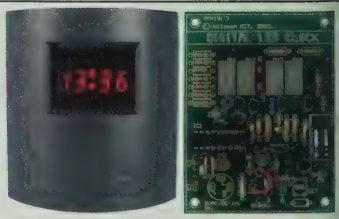
MK158	**LCD Mini Message Board Kit**	**$19.95**

LED Digital Clock KIT

Digital Clock Kits Are Back!

- ✔ Automatic timebase selection!
- ✔ 12/24 hour mode
- ✔ Battery backup

Not your everyday clock kit! This digital clock kit features red 7 segment LED displays in a modern attractive case. Automatic timebase selection gives you the option of internal or line-frequency controlled 50/60 Hz. Internal timebase has a fine tuning adjustment for precision time keeping. It can also be set for either 12 or 24 hour mode and features battery backup (3 AA batteries, not included) in case of a power failure. Runs on 9V AC or DC. Order our AC125 power supply. Comes complete with the custom designed case to give your clock a great finished look. From Velleman.

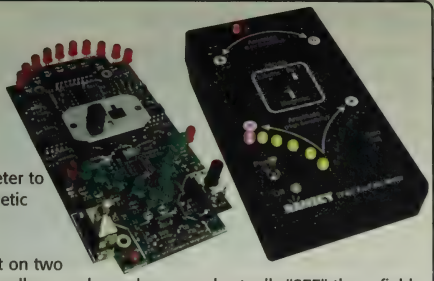


MK151	**LED Digital Clock Kit**	**$34.95**
AC125	**110 VAC Power Supply**	**$9.95**

Tri-Field Meter KIT

- ✔ SEE RF, electric, and magnetic fields!
- ✔ Watch the magnetic field of the earth!
- ✔ Sense different magnetic poles!
- ✔ Detect RF transmitter fields
- ✔ Runs on 6 VDC

Detect It ALL With the SCI-FI Detector You Can Build!

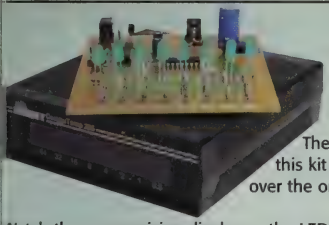


We realize you can't "beam down" to the surface of the planet, but you CAN have our Tri-Field Meter to detect and sense the fields around you! This really neat project actually senses and detects magnetic fields, RF fields, and electric fields! Even Mr. Spock would like this one!

The TFM3 has three separate field sensors that are user selectable to provide a really cool readout on two Sci-Fi styled LED bargraphs! Utilizing the latest technology, including Hall Effect sensors, you can walk around your house and actually "SEE" these fields around you! You will be amazed at what you see. How sensitive is it? Well, you can see the magnetic field of the earth...THAT'S sensitive! Also detect radiation from monitors, TV's, electrical discharge, and RF emissions.

You will have fun finding these fields and at the same time learn the technology behind them. Runs on 6VDC (4 AA batteries, not included). Includes a stylish matching case that will impress even the most fussy Klingons! Live long and prosper! *(Our project engineer told me I could detect static in my hairbrush several feet away... But I don't have any hair!!!)*

TFM3C	**Tri-Field Meter Kit With Case**	**$64.95**



CompuTemp Binary Thermometer KIT

Watch The Binary Conversion!

- ✔ Accurately read temperature from 0 - 125 degrees Celsius
- ✔ Eight bright LEDs show temp in binary fashion
- ✔ Watch the conversion occur!

The CompuTemp is a return of a classic kit that Ramsey developed and sold back in the 70's. We decided that this kit was too interesting to be left in the archives and restored it to our ranks of "neat" kits! It is slightly enhanced over the original, now being able to display Celsius as well as Fahrenheit.

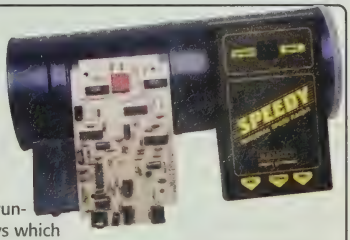
Watch the mesmerizing display as the LEDs count up to the current temperature in binary, then hold the final temperature before starting over. A great conversation piece as well as an educational experience! Learn how to count in binary as well as how analog to digital converters work! Includes the matching case set shown, measures 5"W x 1½"H x 5¼"D.

CT255C	**CompuTemp Binary Thermometer Kit With Case**	**$39.95**
AC125	**110VAC Power Adapter**	**$9.95**

Speedy Personal Speed Radar Gun KIT

- ✔ Direct readout in miles/hour, kilometers/hour or feet/second
- ✔ 1/8 mile range for average car-sized object
- ✔ Earphone output to hear actual Doppler shift
- ✔ The nation's #1 science fair project!

YOU Be The Cop! How Fast Was HE Going!



Here's a kit that's not only a ton of fun for everyone, but useful too! This low cost microwave radar uses the same principle found in police units costing thousands more. You'll turn heads when you clock cars, planes, runners, boats, horses, bikes, races, or virtually any large object that moves. Speed readout is on two LED displays which can be set accurately (better than 1%) to show MPH, kilometers-per-hour, or even feet-per-second. An earphone output allows you to hear the actual Doppler frequency shift of moving objects - the theory upon which all radars operate.

Uses two 13 oz. coffee or juice cans for antenna (not included)... so start drinking! Antenna unit can be remoted up to 300 feet away. The SG7 is easy and informative to build. Our detailed manual not only carefully guides you to a finished unit but also tells you the hows and whys of Doppler radar. Even though the kit employs microwave circuitry no exotic tuning is needed.

All critical sections are PCB stripline and calibration is as easy as pointing the SG7 at a fluorescent lamp! Your Speedy kit includes a deluxe black ABS plastic case with SPEEDY graphics for a neat professional look. Operates on 12 VDC. Electronics case: 3 5/8" x 5 3/4" x 1 1/8".

SG7	**Speedy Personal Speed Radar Gun Kit**	**$59.95**
AC125	**110VAC Power Adapter**	**$9.95**

LED Magic Message Wand

- ✔ Message floats in air!
- ✔ Fun at concerts, events
- ✔ High visibility red LEDs

Say It... In Mid Air!

This is as close as it comes to a "Magic Wand"! Shake it back and forth and brilliant messages seem to appear in mid-air! Six high intensity LEDs are microprocessor controlled to display messages and graphics that are pre-programmed into the wand.

You can also custom program a message of your choice! From amazing your friends, making a statement at a concert, or simply telling your loved one how you feel, the message wand can't be beat!

Runs on two AAA batteries (not included), and the auto power off circuit gives you long battery life. Measures 6.4" x 1" x .9". From Velleman.

MK155 LED Magic Wand Kit KIT **$16.95**

7.9" 7 Segment LED Display

- ✔ 12 LEDs per segment!
- ✔ 22-26VDC non-regulated
- ✔ Common anode or cathode

Now THAT'S A Huge Display!

KIT

Got an application where you need to have a HUGE 7 segment LED display? Well the MK2567 does the trick! When we say huge, we mean huge! Nearly 8" high, the 7 segment display consists of 12 individual high output red LEDs for each segment! To give you an even better idea of the size, the "decimal point" consists of 4 separate LEDs! Now that's huge just for a single dot!

Unlike other displays, a regulated supply voltage is not required so you can use a DC source from 22 to 26 volts to drive this display. Current drain per segment is 40mA static, and 75mA multiplex. Current drain for the entire display is 400mA at 24VDC. The display is available in either common anode or common cathode configurations to match your application. The board measures 5.9" x 9.9". From Velleman.

NEW!

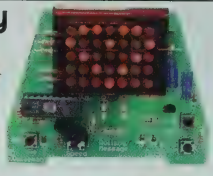
MK2567 7.9" LED Display Kit, Common Anode **$39.95**
MK2568 7.9" LED Display Kit, Common Cathode **$39.95**

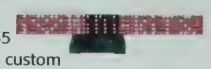
Rolling Message Display

- ✔ 35 LED display!
- ✔ 16 character message
- ✔ Adjustable speed

NEW!

Scroll Your Message!





Create your own scrolling or rolling message with this high visibility LED display! Contains 35 brilliant LEDs to provide each character of your custom message up to 16 characters. Built-in message editor is simple to use. Press "set" to change a character, then use the "up/down" key to select the character and end with the "<" key. Includes a standby/run mode to restart the display. Runs on 9-12VDC and uses a Tykpe 6LR61/6F22 backup battery if required. Measures 1.8" x 3.5" x 2.6". From Velleman.

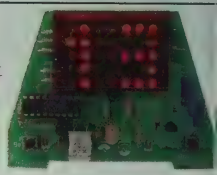
MK124 Rolling Message Display Kit KIT **$14.95**

Rolling Clock Display

- ✔ Scroll the time of day!
- ✔ 35 LED display
- ✔ Adjustable speed

NEW!

Scroll The Date & Time!



Similar to the MK124, this scrolling timepiece shows the date and time in alpha numeric characters in a smooth rolling animated display. A typical display would be "Jun-23 12:57". No external editor is needed to set the date/time. Just select hours, minutes, month or day with the "select" key and enter the values with the "set" key. Time is set in the 24 hour mode, and displayed in the 12 hour mode. Runs on 9-12VDC and uses a Tykpe 6LR61/6F22 backup battery if required. Measures 1.8" x 3.5" x 2.6". From Velleman.

MK123 Rolling Clock Display Kit KIT **$15.95**

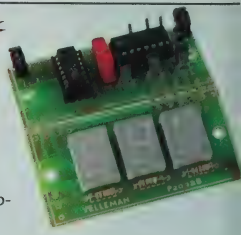
Digital Panel Meter

KIT

- ✔ Replace those analog meters!
- ✔ High impedance input
- ✔ Overload indicators
- ✔ High precision and stability
- ✔ Easy to read 7 segment displays

Replace Those Old Analog Meters... The Easy Way!

NEW!



This is the perfect little kit to replace old or broken analog meters in your equipment.... and the end of their inherent problems! Three seven segment LED displays and a universal interface make the replacement a breeze.

A standard 5VDC supply voltage is used at 250mA. Displays +999mV and -99mV full scale complete with both positive and negative overload indicators. Resolution is 1mV with an input impedance of 100M ohms.

The small size makes it simple to install in your existing equipment. Board measures 1.3" x 2.6". From Velleman.

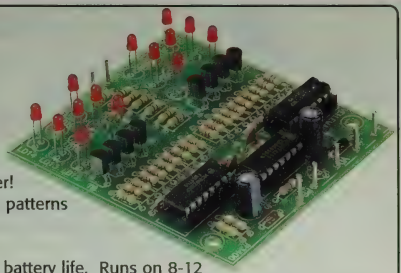
K2032 Digital Panel Meter Kit **$36.95**

Dual Electronic Dice

KIT

- ✔ Displays two separate dice!
- ✔ Single or dual selection!
- ✔ Can't cheat with these dice!

These Dice Won't Fall Off The Table!



A lot of board games require a roll of the dice. And a lot of dice rolls end up on the floor, knocking over the board tokens, the little green houses, or even worse, the red hotels! Not anymore, problem solved! Just hit the switch and the dice randomly cycle and slowly come to rest displaying the number! You can select either one die or a pair of dice, depending on the game. Bright LEDs display the same patterns as regular dice. And this pair of dice won't allow cheating!

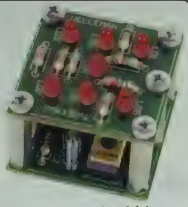
When the game is over, don't worry, the auto power saver switches them off after 30 seconds to save battery life. Runs on 8-12 VDC or a standard 9V battery. Board measures 3" x 2.8" and can be mounted in your own special enclosure. You can be sure that the dice won't end up on the floor! From Velleman. *(Well, when the cheater isn't happy I guess he **could** throw it on the floor!)*

K3400	**Dual Electronic Dice Kit**	**$15.95**
AC125	**110VAC Power Adapter**	**$9.95**

Shaking Electronic Dice

- ✔ Just give it a shake like real dice!
- ✔ Microprocessor controlled!

Shake, Don't Roll!



You don't have to throw it, just shake it and it acts just like regular dice! It rolls out slowly and flashes the last combination or "winning number"! Microprocessor controlled circuit is fun to learn. Runs on one 3V Lithium button cell (not included). Get two to simulate a pair of real dice to get "snake eyes" or "box cars"! Measures 1.4" x 1.4" x 1.3". From Velleman.

MK150 Shaking Electronic Dice Kit KIT **$11.95**

Electronic Roulette

- ✔ Spinning sound!
- ✔ Winner tune!

Easy To Spin This One!

This electronic version of roulette features a neat round PC board with 37 LEDs simulating a real spinning Roulette game! And when it spins, you hear the spinning sound with microprocessor technology! When the spinning stops and there is a winner you hear a winning tune! Easy assembly makes it a cool beginner kit that uses ICs. Runs on 3 AA batteries (not included). Board measures 3.6" diameter. From Velleman.

MK119 Electronic Roulette Kit KIT **$15.95**

LED Traffic Signal

- ✔ 4-way traffic signal!
- ✔ Automatic switching!
- ✔ Adjustable delay!

Sure To Stop The Traffic!

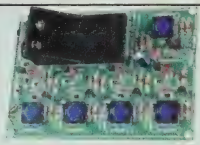
Impress your friends by building a really neat, simulated 4-way traffic signal light! Bright red, green, and yellow LEDs are positioned just like a 4-way signal, and automatically sequence. Adjustable timing allows you to change the delay, something we all wish we could do on the road! Runs on a standard 9V battery (not included) and draws only 15mA for long life. Perfect for model railroads, models, and just plain hobbyists that want to build something really neat! Measures 2" x 1.4" x 4.5". From Velleman.

MK131 LED Traffic Signal Kit KIT **$7.95**

4 Player Quiz Table

- ✔ Shows first button pushed!
- ✔ Quizmaster reset!

The Correct Answer Is?



Just like the TV game shows, you can have up to 4 players "on the ready" just waiting to be the first one to answer the question. But how do you know who's first? That's simple with the MK133! 4 player push buttons are provided. The first player to push their button is indicated with a latched on LED. Just like on TV! The "Quizmaster" button resets it for another round! If you have more than 4 players you can even daisy-chain two MK133s together for up to 8 players! Runs on a standard 9V battery (not included). Measures 4.3" x 3.1". From Velleman.

MK133 4 Player Quiz Table Kit KIT **$9.95**

SMT LED Smiley Face

- ✔ Alternating flashing SMT LEDs!
- ✔ Can be worn as a pendant!

Smile...And Learn SMT!

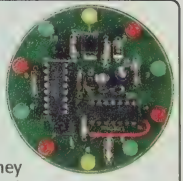
Build this little attention grabber and learn about SMT at the same time! Measuring only 1" this smiley face can be worn as a pendant or just as a conversation piece. And don't worry about losing or damaging the parts; we give you extras! Requires a 3V Lithium Ion button cell. Measures 1.1" x .3". From Velleman.

MK141 SMT LED Smiley Face Kit KIT **$8.95**

Wheel Of Fortune

- ✔ Electronic LED spinning action!
- ✔ Spinning gradually decreases!

Where She Stops...

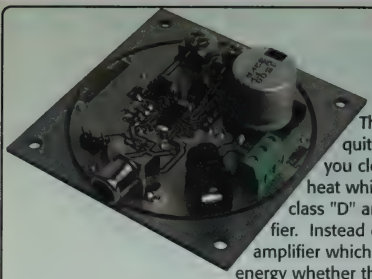


Acts just like the casino game! Just push the button and the 10 LEDs start showing a spinning action. They gradually slow down until the "winning" one remains lit. Push the button to start over again. Auto on/off assures a long battery life. Measures 2.6" x 1.3". Requires a standard 9V battery (not included). From Velleman.

MK152 Wheel Of Fortune Kit KIT **$7.95**

Subminiature 20W Audio Amplifier Module

KIT



22 Watts..And NO Heat!

- ✔ 20 Watts from one SMT package!
- ✔ Super efficient Class D design!
- ✔ Super clean output!
- ✔ No heat/heatsink concerns!

The UAM2 is probably the neatest audio kit to come along in quite a while! It uses the latest amplifier technology to bring you clear, crisp, high-power audio without any of the heat which is normally generated! This is what is called a class "D" amplifier, or as the media calls it, a "Digital" amplifier. Instead of operating like a classic class "A" or class "AB" amplifier which leaves transistors biased on all the time, losing energy whether they are producing audio or not, the class "D" amplifier only produces power into the load or your speaker!

SPECIFICATIONS

Audio Output:	20W max
Signal/Noise:	102dB into 8 ohms
Total Harmonic Distortion:	Less than 1%
Audio Input:	Line level
Gain Adjust:	4 input gain settings
Protection:	Auto short to ground shutdown Auto short to Vcc shutdown Auto short together shutdown Auto thermal shutdown
Power Input:	8-18 VDC, 2.1mm connector (18VDC for full rated output)
Dimensions:	2.6" square, 1.43" diameter

This means that a small SMT part can deliver a full 20 watts of power without getting so much as warm! YES, I said SMT or Surface Mount! Now you can install this amplifier right inside your speaker enclosures, or wherever this nifty kit will fit, without worrying about a heatsink! Just look at the specs! Unique board can be "snapped" out into a small circle to be double face tape mounted directly to the back of a speaker! This IS a Surface Mount (SMT) kit, so you will need fine tweezers, magnifier, and a decent fine tip soldering iron! See assorted tools and accessories on page 96. *(Who ever thought of 20 watts in a single SMT device; I still remember fighting with vacuum tubes to get 20 watts!)*

UAM2	**20 Watt Audio Amplifier Module Kit**	**$34.95**
SPS18	**18VDC Switching Power Supply, 1.7A**	**$24.95**

2 x 30 Watt Audio Power Amplifier

KIT

- ✔ Dual channel, 30W max per channel!
- ✔ Latest IC circuitry, fully protected
- ✔ Includes heatsink
- ✔ Perfect drop-in power amplifier

The Super Easy Stereo Power Amplifier!

SPECIFICATIONS

Audio Output:	2x30W max (2x15W RMS)
Signal/Noise:	98dB into 4 ohms
Total Harmonic Distortion:	Less than 0.07%
Channel Separation:	70dB
Frequency Response:	7Hz to 60kHz
Audio Input Sensitivity:	300mV/150k ohm
Protection:	Transient suppression on/off Auto overload protection Auto short circuit protection Auto thermal shutdown
Power Input:	2x12V AC/DC@ 50W/2A
Dimensions:	2.6" square, 1.43" diameter

This unique small audio power amplifier is designed around the TDA1521 IC. The IC is thermal, short circuit, and overload protected for reliable operation. One of the neat features of this amplifier is that it needs no additional rectifier and smoothing filter because it can also run on AC!

The small board and custom heatsink design make installation and connection a breeze. Just connect your inputs, your speakers (4 or 8 ohm) and power. Don't worry about overloads, or shorts on your outputs because it has automatic protection. In addition, transient suppression is switchable on/off as desired. If you're looking for a sweet little inexpensive stereo amplifier, this is for you! Board, less heatsink, measures 2.8" x 2". From Velleman.

K4003	**2x30 Stereo Audio Power Amplifier Kit**	**$27.95**

7 Watt Audio Power Amplifier

KIT

The Easy Audio Amplifier!

- ✔ 7 Watts output maximum power
- ✔ Overload and short circuit protected
- ✔ Includes heatsink

A super amplifier to use stand-alone or as part of a system. The small circuit board and heatsink make it easy to integrate this into any of your applications requiring a good amplifier. 7 watts maximum audio output (3.5W RMS into 4 ohm) provides a Total Harmonic Distortion of .05% with a Frequency Response between 20Hz and 20kHz. Input sensitivity is is 40mV at 150k ohm. Supply voltage is 8 to 18VDC at .5A (15VDC for rated output). Automatic protection for shorted output and overload. Uses the newest TDA2003 IC for ultimate reliability. Includes the small but efficient heatsink shown. Board measures 2.2" x 1.4". From Velleman.

K4001	**7 Watt Audio Power Amplifier Kit**	**$10.95**

Stereo Headphone Amplifier

KIT — Wired & Tested

- ✔ Make your headphones sound GREAT!
- ✔ Use with table radios, CD players, tuners, and more
- ✔ Great as a basic preamp for any line level signal

No Headphone Jack? NO Problem!

So, you buy a really good radio or CD player, go to plug in your headphones, and there isn't a headphone jack! You find a line level jack, plug in your headphones, and they sound terrible. Sound familiar?

Most good quality gear lacks an earphone output, or if there is one, it is woefully poor quality. We developed this kit to help us listen to our mixers, reverbs, voice recorders and other audio goodies. We took a pair of LM-386 250 mW audio amplifiers, added volume controls, power supply and a handy, switchable, high-cut filter.

A common ¼" stereo earphone jack is used for the output - assuring compatibility with all stereo headphones - and RCA phono jacks accept standard line level input signals. There's plenty of volume and of course, the "Fi" is quite "Hi". Available in money saving kit form or fully wired and tested. Runs on 9 to 15 VDC. Includes an attractive matching case measuring 5"W x 1½"H x 5¼"D. *(Did you know the leading and most well known manufacturer of high-end table radios recommends the SHA1 to all of their customers?!)*

SHA1C	**Stereo Headphone Amplifier Kit With Case**	**$29.95**
SHA1WT	**Factory Assembled & Tested SHA1 With Case And Power Supply**	**$64.95**
AC125	**110VAC Power Adapter**	**$9.95**

KIT — Wired & Tested

Super Stereo Headphone Amplifier

The New Generation Stereo Headphone Amplifier!

- ✔ New for 2006, the next generation headphone amp!
- ✔ Separate volume, treble, bass, balance and loudness controls!
- ✔ Signal level clipping indicator LED !
- ✔ Stereo loop-through for multiple feeds with separate controls
- ✔ CD quality audio!

A few years ago we designed the SHA1 stereo headphone amplifier to provide an audiophile quality headphone signal from a radio or amplifier that only had a line output. The success was overwhelming! As described in previous catalogs and the web site, the largest manufacturer of high quality table radios recommended the SHA1 to their customers who wanted to use headphones with their radio.

Well, it's been a couple of years and the need has been proven so we decided not to just sit on our laurels with the success of the SHA1. We put our engineers to work, asking them questions like... what if a band wanted multiple headphones with separate level controls? And what about controls . . . how about the ability to tailor the audio characteristics to each user's preferences? What about multiple headphones from just one unit? When they got tired of all our questions they said "OK...you've got it, the new SHA2...the next generation headphone amplifier kit!"

Standard 3.5mm stereo audio headphone connectors are used for both looping input and dual outputs for simple Walkman style headphones. That was decided when I recently bought a hundred dollar set of Sony professional headphones that had the 3.5mm plug on them and an included ¼" adapter; I figured it's time to concede to 3.5mm! And before you ask, we provide a dual RCA to 3.5mm stereo input cable with the SHA2 to match up with your standard unbalanced RCA line out connectors!

From there LM386's and LM1036's are used for audio processing providing nearly 1 watt of output to the normal 4-40 ohm headphones or speaker circuits. The loop-through inputs are properly isolated to prevent ground loop and hum problems when daisy chained or used in multiples. The dual outputs are great for that other person that just has to listen in too! We covered it all with the SHA2!

Runs on a built-in standard 9VDC battery but also has a rear power jack for 12-20VDC if you don't want to bother with a battery! If you're looking for a great headphone amplifier to simply listen to the line output of a radio, CD player, tape player, or receiver, our proven SHA1 is the answer. BUT...if you're looking for multiple outputs, looping inputs, daisy chained amplifiers, and bass, treble, loudness control, then try the SHA2, the new generation stereo amplifier! Like the SHA1, it includes an attractive matching case measuring 5"W x 1½"H x 5¼"D. *(So I got myself one of those personal audio/video players, and of course my kids wanted to listen to the Pink Floyd video I just loaded into it...you guessed it, the first prototype of the SHA2 came out and was a winner!)*

SHA2	**Super Stereo Headphone Amplifier Kit With Case**	**$44.95**
SHA2WT	**Factory Assembled & Tested SHA2 With Case And Power Supply**	**$79.95**
AC125	**110VAC Power Adapter**	**$9.95**

The Bullshooter-II Digital Voice Storage

KIT — Wired & Tested

Feature Packed Digital Storage!

- ✔ Multiple message storage and selection
- ✔ Full function controls with 7 segment display!
- ✔ Variable output levels to match your equipment!
- ✔ Great for telephone hold announcements, broadcast announcements, and much more!

The BS2 provides up to 8 minutes of digital voice storage that can be broken down into a maximum of 8 separate stored messages. The message number is displayed on the 7 segment LED front panel display! Recording/playing/stopping is similar to a standard recorder. You can start/stop/pause your message during both record and playback! The BS2 has a built-in, highly sensitive electret condenser microphone for recording your voice messages. However, you can also plug in an external microphone and even an external line level input for that professional studio sounding recording.

Playback-wise, the BS2 features adjustable line level outputs (two mono outputs for stereo inputs) to properly feed any application! You can also directly drive a speaker with the built-in amplified speaker output and monitor the levels with the built-in headphone jack. Whatever your application, the BS2 has you covered! Runs on 12-15VDC. *(See Page 6 for more information on the BS2C)*

BS2C	**Bullshooter-II, Multi-Message Digital Voice Recorder Kit With Case Set**	**$69.95**
AC125	**110VAC Power Adapter**	**$9.95**
BS2WT	**Factory Assembled & Tested BS2 with Case Set and Power Supply**	**$99.95**

Stereo Ear Super Stereo Amplifier

KIT

What Did He Say?

- ✔ Super high gain, amplifies sound 50X!
- ✔ Listen in stereo directly with headphones!
- ✔ Dual stereo microphones included!

The "Super Ear" is an ultra high gain stereo audio amplifier! And when we say high gain, we mean it! It boosts audio 50 times and you can listen to it in stereo besides! Miniature high sensitivity microphones are placed at 45 degree angles to give you maximum separation. This little kit also includes an on/off switch, volume control and audio output connector. Runs on 3 AAA batteries (not included). Measures 2.4" x 2.1". From Velleman.

MK136 **Stereo Ear Super Stereo Amplifier Kit** **$9.95**

Pocket Audio Generator

- ✔ Digital waveform generation
- ✔ Stereo out, dual RCA plugs

NEW!

Test Those Inputs!

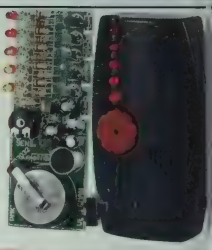
A perfect test source for stereo line inputs. Provides 50Hz, 100Hz, 1kHz, 10kHz, & 20kHz tones, plus 32 bit digital pink noise. Output is line level to two standard RCA plugs. Runs on two CR2016/2025 batteries not included. Measures 3.4" x 2" x 1". From Velleman.

K8065 **Pocket Audio Generator Kit** KIT **$29.95**

Pocket Vu Meter

- ✔ LED bargraph display
- ✔ Built-in microphone

NEW!



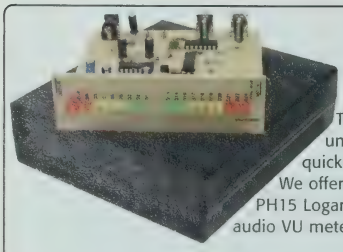
Watch That Music!

Hand held audio level meter that fits in your pocket! Built-in mic picks up music and audio and displays it on an LED bargraph. Includes enclosure shown. Runs on one 3V Li-Ion button cell, not included. From Velleman.

MK146 **Pocket Vu Meter Kit** KIT **$9.95**

Peak Hold LED Bargraph Meters

KIT



Fast Response... PLUS Hold!

- ✔ Linear, log, or semi-log response scales
- ✔ Perfect for audio monitoring

The PH14 series of LED bargraphs capture peak signals with great results! You can consider these bargraph units to actually be two complete LED bargraphs in one! There is the standard 10 segment bargraph with quick response, and a second set of circuitry expressly designed to catch the peaks and hold them for easy display. We offer 3 models of the PH series bargraphs: the PH14 Linear display for voltage indication and general use, the PH15 Logarithmic 3 dB/step model for audio and RF power displays and the PH16 Semi-Logarithmic model, ideal for audio VU meters. Includes the custom case set for a neat and professional finished look. Case size: 5"W x 1½"H x 5¼"D.

PH14C	**Linear Peak Hold Bargraph Meter Kit With Case**	**$34.95**
PH15C	**Log Peak Hold Bargraph Meter Kit With Case**	**$34.95**
PH16C	**Semi-Logarithmic Peak Hold Bargraph Meter Kit With Case**	**$34.95**
AC125	**110VAC Power Adapter**	**$9.95**

Electronic Cricket Sensor

KIT

- ✔ Chirps like a real cricket!
- ✔ Senses temperature and changes its chirp accordingly!
- ✔ You can actually determine the temperature and amaze your friends!

Doesn't Crawl... Just As Annoying!

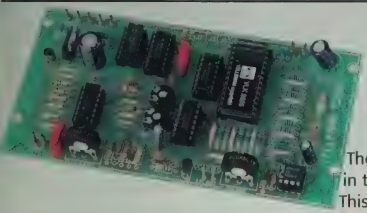
With the incredible popularity of the "Electronic Dripping Faucet" kit (EDF1, page 43), we figured we had to come up with something equally unique! Well, this one is unique...to say the least!

How about an electronic cricket? Sounds just like those little black critters that seem to come from nowhere and annoy you with their chirp-chirp! And just like the little critters, we made it sensitive to temperature so when it gets warmer, it chirps faster! That's right, you can even figure out the temperature by the number of chirps it generates! Just count the number of chirps over a 15 second interval, add 40, and you have the temperature in degrees Fahrenheit! Not as fancy as a digital thermometer, but much more unique! And unlike its little black predecessor, the ECS1 operates from around 50°F to 90°F! I don't think there are too many real crickets chirping away at 90°F! A unique thermistor circuit drives a few 555 ICs providing a variable chirp that is guaranteed to annoy everyone around you! But just watch their faces when you tell them the temperature outside! Runs on 9-12VDC or a standard 9V battery (not included). Includes everything shown, including the speaker and battery clip, to make your cricket project a breeze. *(If it drives you nuts you probably can squish it under your feet to make it stop...but that voids the warranty!)*

ECS1 **Electronic Cricket Sensor Kit** **$24.95**

Electronic Watch Dog

KIT



Automatically "Barks" At The Sound Of Noise!

- ✔ A barking dog on a PC board!
- ✔ Two barking sounds!
- ✔ Automatic sound detection!
- ✔ Eats very little and never sleeps!

There are many times it's nice to have a barking dog react to someone at your door or to a strange noise in the house when you're gone. But not all of us can have a dog! The answer...the Electronic Watch Dog! This unique circuit generates two different sounds of barking dogs. You can select which "dog" you would like! Then when your electronic dog "hears" a strange noise it starts barking! Unlike a real dog, the super sensitive microphone has adjustable sensitivity to control what activates it (I mean makes it bark!). The "dog" produces 2 watts audio output at 4 ohms. This dog doesn't eat dry or moist dog food. Instead it eats 2-8VAC or 9-12VDC! And it's a small one at best; it only measures 5.6" x 3"! You can order the handy power supply below. If you're not building the doggie into your own case or application, you can also order the custom case set below. From Velleman.

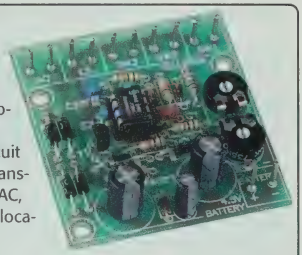
K2655	**Electronic Watch Dog Kit**	**$32.95**
WCAH2851	**Matching Case Set**	**$7.95**
AC125	**110VAC Power Supply**	**$9.95**

Electronic Multi Tone Chime

KIT

- ✔ 1, 2, or 3 tone selectable!
- ✔ Adjustable tone and volume!

Replace That Old Bell!

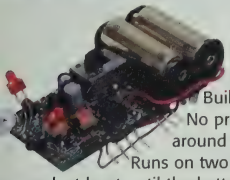


This electronic chime generates three different available chime tones which can be selected by individual switch closures. Perfect for replacing that old doorbell buzzer or bell and can handle three separate door sounds! The IC design provides a clean audio output of a third of a watt into any standard 8 ohm speaker (not included). The circuit runs on 4.5VDC (three 1.5V batteries, not included) or 6 to 9VAC which is normally provided by the old doorbell transformers! Just use that if you have one. Terminals are included for three separate switch contacts, speaker output, AC, and 4.5V battery connections. The compact board measures 2.1" x 2.3" and can easily be installed in any suitable location. For a great finished look, order the recommended case set below. From Velleman.

K6600	**Electronic Multi Tone Chime Kit**	**$24.95**
G416	**Recommended Case Set For K6600**	**$7.95**

Walking Electronic Bug

KIT



THIS Bug Doesn't Eavesdrop...It Crawls!

- ✔ Avoids obstacles!
- ✔ Turns in response to light!

Built around a couple of subminiature vibrating cell phone motors, the bug wanders around looking for things to bump into! No problem there; sensors below his blinking eyes sense obstacles and make him turn away! Likewise, you can steer him around with flashlights or laser pointers! Travel direction and pattern are customized with separate speed and sensitivity controls. Runs on two "N" batteries (not included). Has two brilliant blinking red LEDs as "eyes". This is a fun kit that is guaranteed to keep you amused, at least until the batteries die or the dog kills it! *(My Chocolate Lab would probably try to make friends with it!)*

WEB1 **Walking Electronic Bug Kit** **$29.95**

Rat Blaster Varmint Repeller

KIT

- ✔ Covers over 3,000 square feet
- ✔ Programmable frequencies for optimum repulsion
- ✔ Compare with units costing $150

Eliminate Them... Without Any Harm!

Sure, you've seen these things advertised before. Big claims and a huge price! Well we won't carry on about how you'll be able to keep Godzilla out of your garbage cans, but we will say that this unit will do a nice job of keeping the neighborhood dog, cat, or deer away. Here's the story. We had a problem at the boss's house keeping the deer out of the garden. The boss, being the electronic nut he is, bought one of these things and tried it. It worked pretty well so he planned to get another for protecting the shrubs, but at $150 a box he figured it was cheaper to build his own.

Here it is, cheaper and better! We've increased the power, put in a top-quality transducer (by Motorola), better frequency range and made it affordable. A lot of customers prefer to build it into their own case (or even a garage or shed wall!) so we offer the custom metal case shown as a separate option. Runs on 12 VDC or use our AC adapter. *(Hum-m-m, I wonder if this will work on kids!)*

RB1	**Rat Blaster Rodent and Animal Repeller Kit**	**$59.95**
CRB	**Matching Case & Knob Set for RB1**	**$29.95**
AC125	**110VAC Power Adapter**	**$9.95**

Guitar Headphone Amplifier

KIT

Practice & Play Anywhere!

- ✔ Practice without disturbing others!
- ✔ Can also be used as a preamp
- ✔ Simple connection, guitar in, headphones out
- ✔ Runs on a standard 9V battery

One of the biggest problems with electric guitars is how and where to practice! Unless you have your own home without any close neighbors you just can't plug in that 100W guitar amp and go to it! Well, you can, but it won't be long until there's a knock on your door! This little kit takes care of that with ease!

Just plug your regular or bass guitar into this little amplifier, plug in your standard headphones, and off you go! The output sounds great and you can play and practice in the privacy of your home, apartment, or even the park bench! Only you can hear it! The amplifier features adjustable input sensitivity (gain) as well as variable effects to change the sound output to match the music style you're looking for. Headhone output power is 2x50mW to properly drive any set of headphones with a quality sound. The shielded case/enclosure shown is included to give your amp a nicely finished look. Runs on a standard 9VDC battery (not included). Case measures 2.8" x 1.2" x 4.1". From Velleman.

K4102	**Guitar Headphone Amplifier Kit With Case**	**$34.95**

Speaker DC Protection Module

KIT Wired & Tested

- ✔ Rated for 300 watt speaker handling!
- ✔ Input voltage 90 VDC
- ✔ Easily connects between your amplifier and speakers

Protect Those Speakers!

A lot of people don't know how you "blow out" your speakers. They think they just overdrove them, and...that was it! That's not how it works! Virtually all speaker blowouts are caused when the power amplifier driving them shorts out causing a destructive DC voltage directly to the speaker terminals. Did you blow your amp? Sure, but you don't have to destroy your expensive speakers at the same time!

Install the M4701B directly in-line between your amplifier and your speakers and you will be protected! The speaker will be disconnected from the line the instant a DC voltage is detected. Designed for speakers with a handling capacity of 300 watts, the protector detects and protects a DC input voltage up to 90VDC with a minimum safety voltage of 10VDC. The heavy duty protection relay has contacts rated at 10 amps. No additional power is required to the circuit; merely insert between your amplifier and speakers.

Measures 1.6" x 2.6". If you are not going to install these protectors inside your speaker housings, order the recommended case set for a nice finished look. It is ideal for both home and vehicle installations. From Velleman. *(Yea, vehicle installations, where that power amp in your trunk is just waiting to blow out your speakers!)*

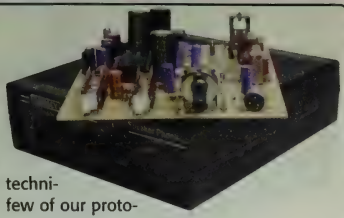
K4701B	**Speaker DC Protection Module Kit**	**$15.95**
M4701B	**Speaker DC Protection Module, Factory Assembled And Tested**	**$20.95**
G410	**Recommended Case/Housing For K4701B/M4701B**	**$7.95**

Super Speakerphone

KIT

- ✔ Needs no battery when connected to phone line
- ✔ Can also be used as hands free intercom!
- ✔ Effective from anywhere in the room

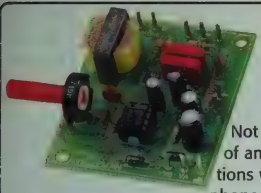
High Performance Motorola Chip!



The Ramsey speakerphone kit efficiently replaces a cluster of add-on phone gadgets to give you what you really want in the shop or office: the ability to answer incoming calls and continue what you're doing while talking from anywhere in the room. We designed this device because we needed such units at work, so the technicians could answer a telephone question while checking a manual or taking a voltage reading. Well, quite a few of our prototypes found their way home and pretty soon we realized that this would make a great kit.

Super for family and conference calling. Or, as we discovered here, connect two together for a completely hands-free intercom - ideal for linking the shop with the rest of the house. Imagine how handy it would be to simply answer back from anywhere in your shop - without stopping what you're doing. It's like linking two rooms together into one. The real beauty of this kit is: 1- it needs no battery when connected to the phone line and 2 - it can be simply connected to the phone line by itself without using an extra telephone. For intercom use, a regular 9 volt battery powers the unit. Includes built-in electret microphone; just add your choice of speaker. Includes an attractive matching case measuring 5"W x 1½"H x 5¼"D.

SP1C	**Speakerphone Kit With Case**	**$39.95**



NEW!

KIT

Telephone Amplifier

Drives Speakers Or Mixers!

- ✔ Connects directly to a phone line!
- ✔ Speaker and line outputs
- ✔ High performance, small size

Not a speakerphone, but a high performance isolated input amplifier that connects directly to a telephone line. Unlike a lot of amplifiers, this one provides both speaker output and line output. Speaker output is perfect for "group listen" applications with standard telephones for group gatherings without the inconvenience and interruption of vox operated speakerphones.

The K4900 also features line level output designed to be connected to the aux input of any standard audio mixer or amplifier. This makes it perfect for radio stations, home broadcasters, and larger applications that need to connect their phone line into their systems. Features a standard isolation transformer input for zero loading of the phone line. Speaker output is a half watt into 8 ohms. Line output is 0dB (.775Vrms). The circuit runs on 7-10VAC or 9-12VDC at 150mA. Board measures 2.5" x 2.1". Designed to be built into existing equipment, but if you need a stand alone amplifer the recommended housing is the G416 below. From Velleman. *(Group listen is great, no speakerphone interruptions yet everyone in my office can hear!)*

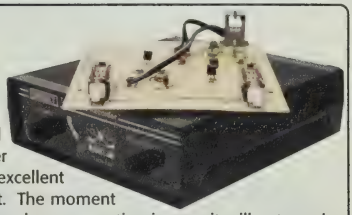
K4900	**Telephone Amplifier Kit**	**$12.95**
G416	**Recommended Case/Housing For K4900**	**$7.95**

Phone Recorder Controller

KIT Wired & Tested

- ✔ Undetectable on phone line
- ✔ Needs no battery, operates on telephone line power

Telephone Line Powered Automatic Control!



Keep a record of all your telephone calls - automatically. The TT1 connects anywhere on the phone line and will control any battery powered tape recorder that has standard microphone and control jacks. The recorder automatically starts and stops whenever the phone is used and records both sides of the conversation with excellent fidelity. Simply plug the TT1C into your recorder's microphone/control jacks, push "record" and you're all set. The moment there is activity on the phone line your recorder will start up and record both sides of the conversation. When the conversation is over, it will automatically stop your recorder!

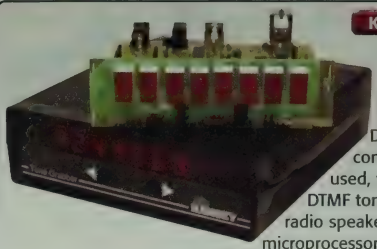
Super-easy one hour assembly and a manual that tells you not only how to build the kit, but how it works as well. The controller is easy to use and looks great in the included custom case shown. Case size: 5"W x 1½"H x 5¼"D. The TT1C is also available factory assembled and tested and ready-to-go! *(I had something like this connected to my 3" reel to reel portable recorder...Yikes am I old!)*

TT1C	**Tattle-Tale Recorder Controller Kit With Case**	**$29.95**
TT1WT	**Factory Assembled & Tested TT1 With Case**	**$59.95**

What Exactly Is In This Catalog?

As the guy that has to make it all fit, I can guarantee you "not everything"!!

Visit www.ramseykits.com to see all the latest and the greatest!



KIT — Wired & Tested

Tone Grabber Touch-Tone Reader

Grab Those Numbers Right Off The Air!

- ✔ **Built-in RJ11 phone jack for easy hook-up and line monitoring**
- ✔ **Super fast-capture numbers off the radio, repeater, phone line, etc.**
- ✔ **Big, bold 8-digit display with automatic insertion of dashes between number groups**

Dialed phone numbers, repeater codes, control codes, anywhere touch-tones are used, your TG2 will decode and store any DTMF tone it hears. A simple hook-up to any radio speaker or phone line is all that is required. Since the TG2 uses a central office quality decoder and a FLASH microprocessor it will decode digits at virtually any speed! The FLASH storage capability of the microprocessor means you can store 640-digit numbers for 10 years - even with the power turned off!

The bright 8-digit LED display lets you scroll through the stored numbers at your leisure. To make it easy to pick out numbers or codes, a dash is inserted between any group or set of numbers that were decoded more than 3 seconds apart. Added features from its TG1 predecessor include an onboard RJ11 phone jack for easier phone line interfacing and an output latch jack offering an external trigger source when a user specified number (1 to 60 digits!) matches the monitored input! The TG2 runs on any 8 to 15 volt DC power source and is both regulated and crystal controlled for the ultimate in stability. Includes the matching professional case set shown, measuring 5"W x 1½"H x 5¼"D.

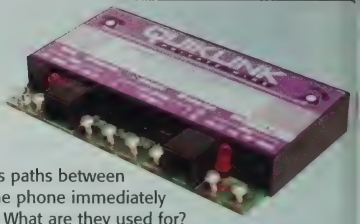
TG2C	**Tone Grabber Touch-Tone Reader Kit With Case**	**$69.95**
AC125	**110VAC Power Adapter**	**$9.95**
TG2WT	**Factory Assembled & Tested TG2, With Case And Power Supply**	**$119.95**

Automatic Telephone "Ring Down"

Wired & Tested

Fully Automatic, Just Go Off-Hook!

- ✔ **Instant off-hook ringdown access between two telsets**
- ✔ **Private full duplex intercom with selectable ringdown**
- ✔ **Instantly generates call on offhook, no dialing!**
- ✔ **Test ringing, answering, and signal-path functions of any telecom device**



What is a telephone ring down, you may ask? They have been used for years as dedicated communications paths between two standard telephone sets. Over a single pair, with a phone at either end, merely going off hook with one phone immediately rings the other phone. When picked up you have a complete intercom path to talk. No dialing necessary! What are they used for? Well, on the intercom or communications side they are commonly used for elevator phones, guard post hotlines, door entry phones in homes and offices, and on commercial job sites for rugged intercoms. But it just starts there!

Can be used to test ringing, answering, and signal path conditions of devices, two-wire off premises extensions, PABX to Key System tie lines, and more. Measures 5/8 x 4¼ x 2½ inches and is totally encapsulated in UL 94V-0 flame-resistant epoxy resin for long, reliable operation. Ringing pattern is selectable to continuous ring; 1 on 1 off; 2 on 2 off; 2 on 4 off. Runs on 12 VAC at 500 mA (Power Transformer is included) or 20–28 VDC at 300 mA. If you work on telephone equipment or are just looking for an ultra reliable telephone, the QLRD1 can't be beat!

QLRD1	**Automatic Telephone Ring Down, Factory Assembled & Tested**	**$89.95**

KIT

DTMF Controller Interface

Full Control From Any Telephone!

- ✔ **Remote control from any DTMF device!**
- ✔ **Call in from the road to turn on your lights...and more!**
- ✔ **User configurable security code for your protection**
- ✔ **User feedback tones confirm remote operation success!**

This microprocessor controlled DTMF decoder fits the bill for multiple applications. Remotely control almost any device with the built-in relay circuitry. The DCI series unit continually monitors your phone line and looks for the proper user programmed security code. Once it is heard, the user may select which of the trigger relays to turn on or off (2 or 4 outputs, model dependant). Feedback tones from the DCI are then sent back over the line to confirm your selection. No more wondering if your commands are carried out as is commonly found with other similar devices! Now you can call home and, when your answering machine picks up, control lights, security systems, or just about any number of other custom applications!

Provides four 5 Amp (1250VA AC/150W DC) relay outputs, each with its own sure grip screw terminal. Requires 9-18VDC at 300 mA. Our standard AC125 110VAC power adapter is available. The matching case & knob set is included to make your kit look professional and attractive in any setting.

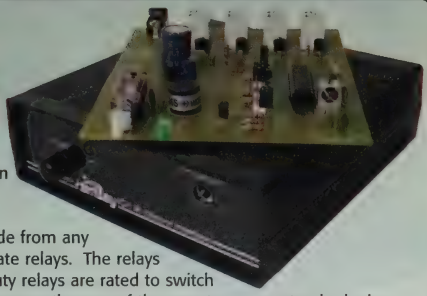
DCI1C	**DTMF Controller Interface Kit With Case**	**$39.95**
AC125	**110VAC Power Adapter**	**$9.95**

Infra-Red Switch Control Interface

KIT

- ✔ "Learns" the signal from your existing IR remote controls!
- ✔ Controls up to 4 separate relay outputs at 3 amps!
- ✔ Provides latch on/latch off functions
- ✔ Includes matching case set

Push On, Push Off... ANYTHING!



One of the latest in the series of ICI Infra-Red interfaces from Ramsey! Now it's a breeze to control any on/off function with any button of your existing IR remote control! That's right, any button of your EXISTING 38 kHz remote control!

Using the latest Motorola microcontroller as the "brain" of the controller, the ICI1 learns the IR code from any existing IR remote controller. An IR photodiode detects the IR remote and controls up to 4 separate relays. The relays turn on and turn off with a simple push of the remote control button programmed! The heavy duty relays are rated to switch up to 3A, so the control capabilities are endless! The relay outputs are brought out to 2-pin headers on the rear of the case to accept standard wire connections. If you are looking to control audio volume with a standard IR remote control, check out our ICI2 IR Audio Control Interface Kit below. It learns your IR remote control functions and can be programmed to provide a variable "volume control" to control any line level audio source! Operates on 7-15VDC or our optional AC125 power adapter. *(push on, push off...the pusher!)*

ICI1C	**Infra-Red Switch Control Interface Kit With Case**	**$39.95**
AC125	**110VAC Power Adapter**	**$9.95**

Infra-Red Audio Control Interface

KIT

Control ANY Audio Equipment!

- ✔ Controls audio levels from any of your equipment!
- ✔ "Learns" the signal from your existing IR remote controls!
- ✔ 2-Channel RCA audio in/out connections
- ✔ Includes matching case set

We took our ICI1 IR Switch Control Interface (above) and went one step further! What if you want to control the audio level of something and there is no existing remote control function? Now it's simple! The ICI2 simply goes in line with any audio source to give you full variable control with ANY existing IR remote control! Dual channels with separate controls give you the option of stereo or two separate audio sources! Using the same Motorola microcontroller brain as the ICI1, the ICI2 learns the IR code from any existing 38 kHz IR remote controller. An IR photodiode detects the IR remote and provides a variable up/down control of your audio source. The ICI2 has dual RCA line level input and output connectors on the rear panel for easy connection. Connect it in line with your audio component and you're all set!

Check out our ICI1(above) if you're looking to control on/off functions like lights, fans, etc. Also check out our ICI16 (below) that provides a digital 4-bit output for customized applications! At Ramsey, we give you full control...of your remote control! Operates on 7-15VDC or our optional AC125 power adapter. *(One of our guys runs his 2-meter and 440MHz amateur receivers into his house intercom, and separately controls the volume!)*

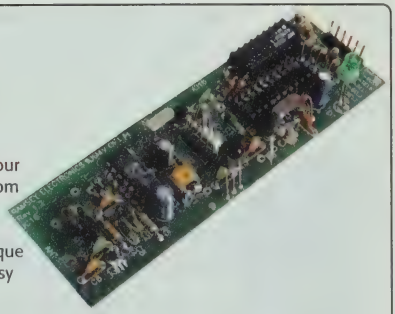
ICI2C	**Infra-Red Audio Control Interface Kit With Case**	**$39.95**
AC125	**110VAC Power Adapter**	**$9.95**

Infra-Red Digital Control Interface

KIT

- ✔ Generates a digital output from any IR remote button!
- ✔ "Learns" the signal from your existing IR remote controls!
- ✔ Plugs into your existing projects and applications
- ✔ The perfect experimenters kit!

Create Any Digital Output!



We gave you on/off switch control with our ICI1 (above) and we gave you variable audio control with our ICI2 (also above), but now we've taken IR remote control one step further! The ICI16 gives you a custom digital output from your IR remote control buttons! Using the same Motorola microcontroller brain as the ICI1 and IC2, the IC16 learns the IR code from any existing 38 kHz IR remote controller. Once learned, a push of the button generates a 0-15 coded output on 4 lines depending on 16 different unique codes learned from the IR controller! The board uses two standard 6-pin 0.1" center connectors for easy mounting, plug-in, and wiring.

Out of IR range and want to get really creative? Use the ICI16 with our RRW1AC (page 34) which converts your IR to RF. The ICI16 receives the RF and converts it to a 1 of 16 digital signal output! Just use your technical imagination *(The heart of Ramsey's 34 year history!)*. Operates on 7-15VDC.

ICI16	**Infra-Red Digital Control Interface Kit**	**$39.95**

Wireless IR Remote Repeaters

KIT

Don't Be A Control Freak!

- ✔ Works with almost any remote control, does not need to be programmed!
- ✔ Transmitter converts your IR remote to RF
- ✔ Receiver converts transmitted RF back to your IR signal
- ✔ Operate from 7V to 18V AC or DC

Have you ever been frustrated with the range of your remote controls? Tired of having to bounce your IR remote off ceilings and walls? Do you want to run your system from another room or floor? This is the answer to your prayers! Extend the range of your remote controls through walls, around corners, and even from outdoors. Unlike store bought units, error correction can be turned on for pulse width regeneration. The foolproof IR repeater! Take advantage of wireless technology with this practical kit, which almost anyone can use. The RRW1A and RRW1B pair allow you to rebroadcast your AV Infrared 38 kHz remote controls wirelessly on 433 MHz up to 100 feet. Broadcast through walls, doors, floors, and ceilings. Use the pair to control the satellite receiver downstairs, and watch it upstairs! Be outside and control the tunes on your stereo system in the living room!

Use multiple RRW1A's to broadcast from multiple locations in the house to the single RRW1B receiver near your equipment. Feed the control freak in all of us! Both units operate on 7-18V AC or DC. For continuous operation, use our AC125 AC power adapter. Sleek matching cases measure 5"W x 1½"H x 5¼"D. *(Don't you hate it when you go to someone's house and they have a dozen remotes on the coffee table? Don't they know about universal or smart remotes?)*

RRW1AC	**Wireless IR/RF Transmitter Kit With Case**	**$29.95**
RRW1BC	**Wireless RF/IR Receiver Kit With Case**	**$34.95**
AC125	**110VAC Power Adapter**	**$9.95**
RRW1P	**Complete Package, RRW1A With Case, RRW1B With Case, Two AC125 Power Adapters *($84.80 Value)***	**$74.95**

Wired IR Remote Receiver/Repeater

KIT

- ✔ Control those components anywhere in the house
- ✔ Works with any 38 KHz carrier IR remote
- ✔ Indicator shows IR reception
- ✔ Operates from 6V to 16V AC or DC

Don't Rearrange Your Room!

Have you ever been so frustrated with the range of your remote that you have to go through the effort of rearranging your entertainment room? Tired of having to bounce your IR remote off ceilings and walls? Do you want to control your system from another room? The RR1 is the answer for you. We use a super integrated IR detector with bandpass filtering, AGC, and RFI shielding. Receiving range is easily over 35 feet! It extends the range of your IR remote controls to distances limited only to the wire length you use! Locate the IR receiver in a convenient location reachable with your existing remote control, and run the IR LED extender cable near the front of the equipment you wish to control. It's that easy! Keep your expensive components safely locked away, and let the RR1 be the key to control them!

While you're building this kit, learn the theory of how IR remotes work and how we use the power of a microprocessor to provide you with flawless performance and the added benefit of error correction! The included matching case set measures 5"W x 1½"H x 5¼"D.

RR1C	**Wired IR Receiver/Repeater Kit With Case**	**$29.95**
AC125	**110VAC Power Adapter**	**$9.95**

IR Light Barrier Alarm

NEW!

KIT

Just Break The Beam!

- ✔ Up to 13' range!
- ✔ Invisible light beam!
- ✔ Audible and visible alert

Use the power and invisibility of an IR light beam to your advantage! This little kit includes the transmitter and receiver for a highly efficient intruder alarm. Includes an Infra-red transmitter board that generates a high power and focused invisible beam of light that covers up to 13 feet! The matching receiver features a high sensitivity IR receiver that picks up that beam and when broken, sounds a built-in 85dB audible alarm and lights an LED. Both the transmitter and receiver operate on standard 9VDC batteries to prevent problems during power failures. Perfect to announce visitors, burglar alarms, set boundaries for animals, and for science fair projects. Transmitter measures 2.2" x 1.6" and the receiver measures 3.9" x 2". From Velleman.

MK120	**IR Light Barrier Alarm Kit**	**$9.95**

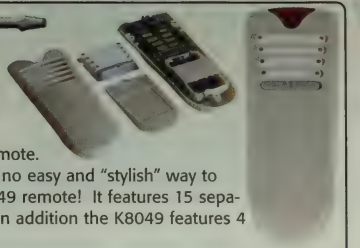
IR 15 Channel Hand Held Remote Transmitter

KIT

- ✔ 15 channels with 4 separate addresses!
- ✔ Professional rubber keypad!
- ✔ Compatible with multiple receiver kits
- ✔ Includes stylish case

NEW!

Control A LOT Of Stuff!

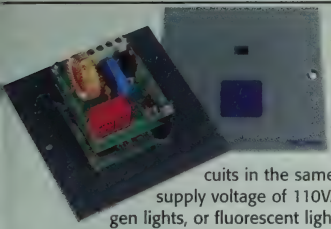


IR remote control is here to stay! Virtually all consumer electronic equipment is equipped with its own IR remote. So why not use IR to control your own projects, circuits, or household functions? Well, up to now there was no easy and "stylish" way to have a consumer attractive remote to use with your equipment. Consider that problem solved with the K8049 remote! It features 15 separate channels that can be programmed to control anything using compatible receivers and receiver circuits. In addition the K8049 features 4 separate addresses to allow the use of multiple receivers in one room!

You can use this one single remote with the MK161, MK163, M164, K6712, and K8050 receivers featured on the following pages. It really doesn't get much easier than that! Includes built-in LED function indicators and runs on three standard AAA batteries (not included). From Velleman.

K8049 **15 Channel IR Transmitter Kit** **$44.95**

IR Remote Controlled Dimmer Kit



NEW!

KIT

Dim Those Lights Remotely!

- ✔ Fits into a standard switch box!
- ✔ For incandescent lights up to 2 amps!
- ✔ IR distance up to 23 feet!

Use this receiver for a wall mounted light dimmer in place of a standard light switch. Uses one channel of the 15 channel K8049 IR remote control for light dimming function. Use separate K6712's for different lighting circuits in the same room or throughout the house and assign different channels for each! Maximum dimmer load is 2A with a supply voltage of 110VAC at 60Hz. Note, as in all dimmers of this type, the K6712 is not designed for high current, high output halogen lights, or fluorescent lighting fixtures. From Velleman.

K6712 **IR Remote Controlled Dimmer Kit** **$52.95**

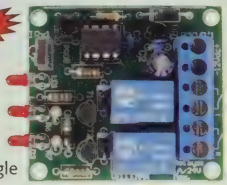
IR 2 Channel Remote Receiver

KIT

- ✔ Two channel relay output!
- ✔ 'Learn mode' settings are stored in EEPROM
- ✔ Toggle or pulse selection for each channel

Program Two Functions!

NEW!

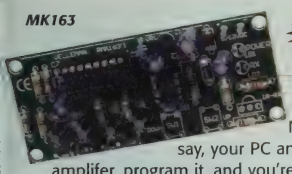


Use the sleek K8049 as the main remote for your IR control. Perhaps add an automatic light dimmer with the K6712 above. But with 15 channels available on your remote you've got lots of control room to spare! This tiny little receiver gives you two separate channel functions, providing relay closures for each! Each control function can be set for either toggle or pulse mode to fit your specific application. Plus, all settings are stored forever in the built-in EEPROM! Channel and acknowledgement of reception are indicated on the attached LEDs. Relay outputs are rated at 24VAC/VDC at 1A. Runs on 12VDC at 0.75mA and measures a small 1.7" x 1.9" x .6". From Velleman.

MK161 **IR 2 Channel Remote Receiver Kit** **$19.95**

IR Stereo Volume Control

MK163



NEW!

KIT

Control Line Level Stereo Levels Between Units!

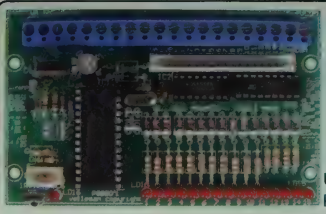
- ✔ Control line level stereo audio!
- ✔ Range 0dB to -79dB in 62 steps!
- ✔ Mute, up, down, and auto fade-in

Now that you have your K8049 remote control, look how simple it is to control stereo audio levels between, let's say, your PC and your stereo amplifier! Just put this little board in line with the line level audio output of your source and your amplifer, program it, and you're all set! Provides continuous "up" and "down" control from 0dB to -78dB attenuation in 62 steps! Also features audio "mute" with "auto fade-in". The tiny board is small enough to be built inside any existing unit you wish to control audio levels on. Runs on 9-12VDC for easy connection to existing power supplies or even a 9VDC battery. Measures 3.1" x 1.4" x 0.6".

If you want a stand-alone unit, check out the MK164! Built in a sweet little enclosure with an IR viewing window, it has audio input, out, and power jacks to make external connection a breeze. Just plug the unit between the audio source and the amplifier or destination and you're all set! Includes the slick little housing shown. Measures 3.2" x 2.2" x 1.3". From Velleman.

MK164

MK163 **IR Stereo Volume Control Board Kit** **$16.95**
MK164 **IR Stereo Volume Control, External Kit With Enclosure** **$16.95**



NEW!

KIT

IR 15 Channel Receiver

15 Channels, 3 Addresses... In A Single IR Receiver!

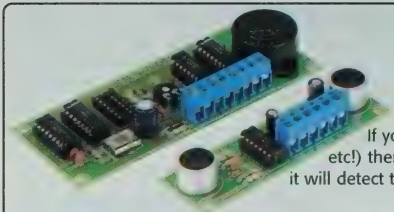
- ✔ 15 separate open collector outputs!
- ✔ 3 separate addresses!
- ✔ LED indicator of each output
- ✔ 4 separate modes
- ✔ Small compact board

Use this 15 channel IR receiver with your K8049 transmitter and control multiple devices in several rooms! Provides 15 channels of control, with 3 possible separate addresses for use in multiple rooms.

4 operating modes provide 15 independent outputs, 15 rotary outputs, 7 independent outputs and 8 rotary outputs, and 7 rotary outputs and 8 rotary outputs independent from each other! Each output is an open collector rated at 50V/50mA. Runs on 8-14VDC, 10mA all outputs off, 150mA all outputs on.

Comes complete with one LED IR sensor. Order up to two additional LED IR Sensors below for up to 3 separate receive locations. PC board measures 2.8" x 4.5" and has easy to connect terminals for all outputs. From Velleman.

K8050	**IR 15 Channel Receiver Kit**	**$32.95**
IR38DM	**LED IR Sensor**	**$3.95**



KIT

Ultrasonic Parking Radar

Don't Hit It... Detect It!

- ✔ Detects how close you are!
- ✔ Adjustable range!
- ✔ Audible alert BEFORE the crash!

If you have problems parking your vehicle without running into things (like the garage, another car, a wall, etc!) then the Parking Radar kit is for you! Mount the sensor board on the rear of your car, truck, or trailer and it will detect the proximity of whatever you're getting close to!

Ultrasonic audio waves, higher than human hearing are used to "measure" the distance! The sensor board is connected to the detector that includes an audible alarm. The proximity can be adjusted anywhere from 2" to 5' and has a detection angle of 5 degrees. The uses of this handy little detector are endless, and save a lot of crumpled metal!

Running on 10-15VDC the Parking Radar is ideal for 12VDC vehicle power. Just connect a lighter plug cord and you're all set. The small sensor board measures 1.1" x 3.7". The main board measures 1.9" x 4.9". The boards can be custom installed in your vehicle, in your own case, or you can order the recommended enclosures below. From Velleman. *(My car needs one of these on both sides plus the front and rear bumpers!)*

K3502	**Ultrasonic Parking Radar Kit**	**$39.95**
G416	**Recommended Case Set For Main Board**	**$7.95**
G407	**Recommended Case Set For Sensor Board**	**$7.95**

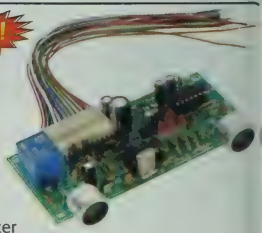
Ultrasonic Radar Module

Wired & Tested

- ✔ Uses a 40kHz ultrasonic beam!
- ✔ LED alarm and distance LEDs
- ✔ Buzzer and relay outputs!
- ✔ Factory assembled & tested, ready to go!

Sense And Detect By Distance And Proximity!

NEW!



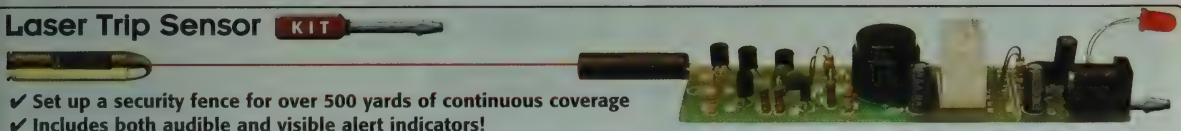
The one-piece cousin to the Parking Radar Kit above, available factory assembled and tested for immediate use in your project!

A 40kHz ultrasonic beam measures the distance to oncoming objects and warns you in several different modes. A buzzer output provides a fast, slow, or continuous audible output. Relative distance is displayed with a 3-bar LED graph display. An alarm indication is provided by an LED indicator as well as a set of NO/NC relay contacts.

Features adjustable alarm distance and a range of 7" to 8'. Output relay NC/NO relay contacts are rated at 1A low voltage. Runs on 12VDC at 200mA max. Board measures 4.3" x 2" x .7". If you're looking for a "proximity" or presence sensor for a project or application, this is the perfect choice! Just interface it into your project and you're all set! From Velleman.

VM125	**Ultrasonic Radar Module, Factory Assembled And Tested**	**$59.95**

Laser Trip Sensor KIT



- ✔ Set up a security fence for over 500 yards of continuous coverage
- ✔ Includes both audible and visible alert indicators!
- ✔ 5 Amp external trigger relay for custom applications!
- ✔ Detector standby current draw of only 10 uA!!!

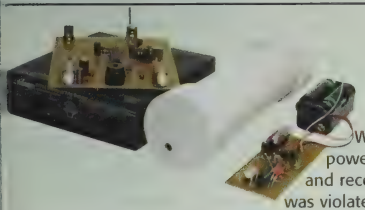
Build It Tonight, Sleep Tight!

For years hobbyists have been intrigued by the possibility of using a 'beam of light' to control other devices! The abundance of inexpensive laser elements that have now become available has further pushed the demand for useful products and experimental kits. The LTS1 Laser Trip Sensor was developed with the intention of providing a fun and educational kit that can actually be used constructively upon completion. The kit comes with all you'll need to set up your own laser fence: the laser element (small keychain type high power laser pointer!), the PVC enclosure, and the laser detector with built-in Audible and Visible Alert indicators. *(And yes, you can put the laser pointer on your keychain instead, and get thrown out of concerts, no problem!)*

The LTS1 can be used in a number of different ways. The break-away circuit board gives the user the flexibility of remotely mounting the detector circuit (optionally powered with a standard 9 Volt battery) over 500 yards away without the need for mirrors. If mirrors are used, arrangements in a doorway or as a perimeter fence can almost guarantee detection of any unwanted guests. For added functionality, the relay output (5 Amp rating) can be used to drive other devices such as an event counter, lights, or even camera modules! Operates from 9 - 18 VDC @ 90 to 100 mA. Detector portion can use a standard 9V battery with long life. Board dimensions: 4" L x 1" W (max component height: 5/8"). Includes a 6" length of 1¼" ID PVC to conveniently house and mount the board assembly. *(Now all you need is a fog machine so you can see the laser beams just like those spy movies!)*

LTS1	**Laser Trip Sensor Alarm Kit**	**$29.95**
AC125	**110VAC Power Adapter**	**$9.95**

Wireless Trip Sensor Wired & Tested KIT



Remotely Detect Motion!

- ✔ Our popular Laser Trip Sensor...*NOW WIRELESS!*
- ✔ Remote sensing up to 300' away
- ✔ Provides both audible and visible alarms

With the popularity of our Laser Trip Sensor we designed the Wireless Trip Sensor! We combined a very low power sensor along with a powerful UHF transmitter that can send from over 300 feet away. Each transmitter and receiver can be set for their individual code allowing you to protect various 'zones' and telling you which zone was violated! The source is generally placed near a continuous power source and the remote transmitter can be placed anywhere without running any wires. The transmitter is typically effective for up to 600 feet. The WTS1 will constantly look at the ambient light in the room or area you wish to protect and sense any blockage of the light. Once that happens it sends its wireless signal to the matching receiver to alert you! No definitive trip paths and no wires!

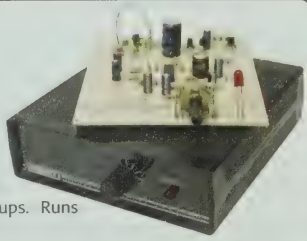
The sensor/transmitter mounts in a standard piece of 1½" PVC pipe (included) for easy and inconspicuous mounting. Being battery powered, there are no wires or plugs attached. The receiver includes a visible LED alarm as well as a built in audible alarm. Once tripped, the alarm remains on until it is reset by the front panel reset switch. Transmitter and receiver work at 433MHz and are designed around our proven RF modules (Page 44). Receiver includes a built-in wire whip antenna and the attractive black custom case set shown. The transmitter operates on four AA batteries (not included) and the receiver runs on 9-15 Volts DC, or our AC125 power adapter (optional). Case size 5"W x 1½"H x 5¼"D. Find out when someone goes into that room today, with the Wireless Trip Sensor.

WTS1C	**Wireless Trip Sensor Kit With Case**	**$64.95**
AC125	**110VAC Power Adapter**	**$9.95**
WTS1WT	**Factory Assembled & Tested WTS1 With Case And Power Supply**	**$104.95**

Microwave Motion Detector KIT

- ✔ Great introduction to microwave basics
- ✔ Ideal for home alarms

Don't Cook... Detect Motion!

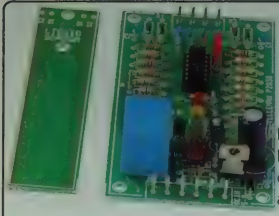


This unit sends out a microwave signal and looks for a return; a moving object will reflect back some microwave energy and the kit detects it. Since microwaves *(no, you won't get cooked or burned by them!)* are used - heat, light, sound or vibration will not affect the sensor. This makes it ideal for car and home alarms, outdoor and garage light operators, animal in-your-garbage alarms, and tons more ideas limited only by your imagination. Kit includes detailed instructions, theory of operation, the custom case set shown, and lots of applications and hook-ups. Runs on 9 to 15 VDC. Case size: 5"W x 1½"H x 5¼"D.

MD3C	**Microwave Motion Detector Kit**	**$19.95**

Liquid Level Controller

KIT



Check The Water Level Remotely!

- ✔ LED level indicators!
- ✔ Relay switch output!
- ✔ Selectable alarm output!

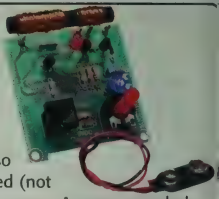
If you have a reason to monitor the level of water or other liquids, the K2639 Liquid Level Controller is just the kit! Not just an alarm like its little Mini-Kit brother the MK108, it gives you an LED display of LOW, MIDDLE, or HIGH levels. You can also have it turn on a pump or switch open a valve with a 240VAC, 3A relay output. Plus, there is an alarm output that you can selectively set to sound under a HIGH or LOW condition.

Runs on 12-14VAC or 16-18VDC. Relay output is rated 3A at 240VAC. Main controller board measures 4.1" x 2.4". Separate sensor board measures 4.1" x 1.0". If you're looking for a nice matching power supply, order our PWR25 below. Now there are no excuses for a wet basement. From Velleman. *(Well, actually there IS an excuse for a wet basement... I never put one of these down there and what a mess!)*

K2639	**Liquid Level Controller Kit**	**$19.95**
PWR25	**12VAC Power Supply**	**$9.95**

Metal Pipe & Wire Detector

KIT



Detect Through Walls!

- ✔ Detect metal objects thru walls!
- ✔ Locates pipes, wires, & ducts!
- ✔ LED indicator shows proximity!

Finding a stud behind a wall is one thing, the old bang on the wall usually helps with that. But how do you know there's not a wire, cable, pipe or vent there? You don't! So you go ahead and drill that hole...or drive in that nail...and there it is, the electrical cable or pipe that you didn't expect! Now it's easy to avoid that hassle! Just hold this small metal detector against the wall and it will detect the presence of metal pipes, wire, vents, and ducts! Now you KNOW what's behind there so you DON'T drill into it! A bright LED glows upon presence of metal to alert you. Board is designed for a small buzzer if desired (not included) Operates on a standard 9VDC battery (not included). Board measures 2.2" x 2.5" and nicely fits in many standard cases. A recommended case is available for a neat finished look. From Velleman.

K7102RS	**Metal Pipe & Wire Detector Kit**	**$12.95**
G407	**Recommended Case Set For K7120RS**	**$7.95**

Digital Tachometer

KIT

NEW!

The Easy Way To Display RPM!

- ✔ 100 to 9900 RPM!
- ✔ Easy calibration!
- ✔ Includes front bezel

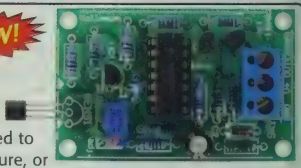
What a simple, neat, and "custom" way to add a tachometer to your vehicle! This digital tachometer includes two bright 7 segment LED displays to provide a unique digital display of your RPM! Range is 100 to 9900 RPM to cover a slow idle to a leadfoot (usually followed by a blown engine!). An attractive red filter front bezel is included to give you a perfect custom look! Runs on vehicle voltage (10-15VDC) at 200mA. The small main board measures 3.2" x 2.4" and the display PCB measures 3.2" x 1.8". The matching red filter bezel measures 2.8" x 3.5". If you're looking for a super looking tachometer for your vehicle, the K2625 does the trick. From Velleman.

K2625	**Digital Tachometer Kit**	**$32.95**

Temperature Sensor Module

KIT

NEW!



Quick & Easy Temperature Sensor!

- ✔ Measures -4° to +158° Fahrenheit!
- ✔ Highly accurate!
- ✔ Simple adjustment

Looking for a general purpose, easy to interface temperature sensor for your projects? This is it! Whether you need to control heating and cooling of rooms or equipment, monitor temperatures in circuits, monitor your pool temperature, or simply put a temperature readout on your website, the K8067 fits the bill... with an accuracy of 2° over the full range.

The small board makes integration into your project or equipment simple, and the sensor device can be board mounted or remotely located from the board. The temperature range is -20°C to +70°C (-4°F to +158°F). The output is a standard 0-20mA current loop for easy interfacing. Input voltage of 12VDC provides 0-5V output while an input voltage of 15VDC provides 0-10V output. Current consumption is 30mA max. Board measures 2.2" x 1.4" x 0.6". From Velleman.

K8067	**Temperature Sensor Module Kit**	**$19.95**

Microprocessor Controller-Timer KIT

NEW!

- ✔ Week/day programming!
- ✔ Temperature programming!
- ✔ Built-in LCD display
- ✔ 4 noise-free relay outputs
- ✔ 50 program steps per output

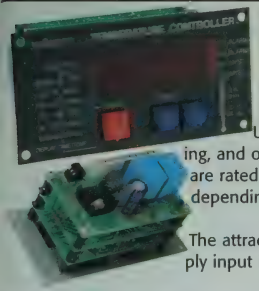
Makes Complicated Controls... A Breeze!

The K6000RS is not your typical small controller/timer! It features day/date programming but doesn't stop there. It can also control temperature independently with one or all of the 4 separate outputs! The controller provides 4 noise-free relay outputs rated at 5A. In addition, 4 separate optocoupler inputs for external temperature sensors are provided.

The controller provides 50 program steps per output with a total of 200 steps. The primary power requirement to the controller is 110VAC. Memory backup input can be provided by a 9VDC or 4.8VDC battery. A built-in LCD display provides status information including output number, temperature, on/off, day/date, time, etc. The controller automatically detects a faulty temperature sensor and switches off the respective output and displays a failure notice on the LCD display. Temperature measurements and control require the K6001 or K6003 temperature sensors per channel (maximum of 4). An attractive front panel is provided that includes access touch switching, display window, and status indicators. Panel measures 9.21" x 4.72" x 1.97". Power transformer is included. From Velleman.

K6000RS **Microprocessor Controller-Timer Kit** **$169.95**

Temperature Controller KIT



NEW!

Two Independent Outputs!

- ✔ -40° to +302°F alarm range!
- ✔ Two relay outputs at 5A
- ✔ Built-in LED display

Unlike a normal thermostat controller the K6002 has two outputs, one for "high" to switch on cooling or air conditioning, and one "low" to turn on heating. Both outputs are adjustable independently each with their own hysteresis. Relay outputs are rated at 5A at 220VAC. Remote temperature sensing requires a K6001 or K6003 temperature sensor below; your choice depending on your application. An optocoupled temperature sensor input is provided for either sensor.

The attractive front panel includes a built-in LED display and indicators for all status functions and is easy to mount. Power supply input is 9VAC at 300mA maximum. Front panel measures 2.4" x 4.6" x 3.2". From Velleman.

K6002 **Temperature Controller Kit** **$79.95**

Remote Temperature Sensor KIT

NEW!

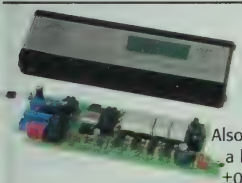
- ✔ -40° to +302°F temperature range!
- ✔ Long distance cabling possible
- ✔ High accuracy

Remote Temperature Sensing... Made Easy!

Designed for use with the K6000RS multi channel controller timer to build a temperature regulation and control system. Up to 4 of these sensors, or the K6003 sensors, can be used with the K6000RS controller for multi-zone regulation. Can also be used with the K6002 Temperature Controller above. Using pulse width modulation these sensors can be located away from the controller with little concern for cable length. Linearity throughout the range is better than 0.5% for high accuracy control. Pulse width modulation is 200usec/°F. Supply voltage to the sensor board is 12VDC non regulated ±2V at 20mA maximum. PC board measures 1.8" x 1.9". From Velleman.

K6001 **Remote Temperature Sensor Kit** **$19.95**

Temperature Sensor Module With LED Display KIT



NEW!

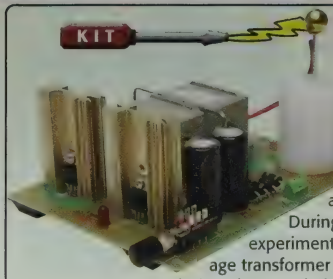
Remote Sensing With Local Display!

- ✔ Built-in LED display!
- ✔ Current, minimum, maximum temps
- ✔ Sleek aluminum housing!

Also designed for the K6000RS and K6002 controllers, this sensor has all the features of the K6001 above but also includes a local LED display and a sleek aluminum housing for a really neat looking installation. The 3½ digit LED display features ±0.1° resolution and can be set to either degrees Celsius or degrees Fahrenheit. Display shows current temperature, minimum temperature setting, and maximum temperature setting. Runs on 12-15VDC 150mA unregulated. Measures 5.7" x 2" x .9". From Velleman.

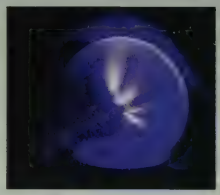
K6003 **Remote Temperature Sensor Kit With LED Display** **$64.95**

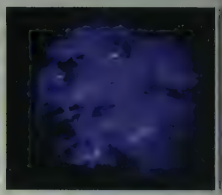
KIT Plasma Generator



Shocking Results... Literally!

- ✔ Generate 2" sparks to a handheld screwdriver!
- ✔ Light fluorescent tubes without wires!
- ✔ Build your own Plasma Balls!
- ✔ Generates up to 25kV @ 20 KHz from a solid state circuit!





This new kit was conceived by one of our engineers that likes to play with things that can generate large, loud sparks, and other frightening devices. During the process of looking for parts for one of his latest experiments he discovered how difficult it was to find a high voltage transformer that met his requirements. Well, we had a super unit designed expressly for us!

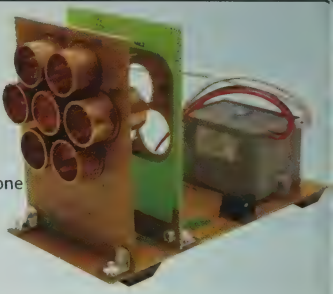
This is one heck of a neat kit! Hey, it really serves no purpose other than producing stunning lighting displays, drawing big sparks, scaring the neighbors and performing lots of high voltage experiments. In the picture we took a regular clear "Decora" style light bulb and connected it to the PG13 - WOW! A storm of sparks, light tracers and plasma filled the bulb. Holding your hand on the bulb doesn't hurt a bit and you can control the discharge! It can also be used for powering other experiments; let your imagination be your guide! The high voltage at the terminal won't electrocute you, so it's relatively safe, but it can burn you, so use caution. Can also be run from 5-24VDC so the output voltage can be directly adjusted. This is for advanced experimenters only and not for the faint of heart! *(Unless you buy the ECG Kit on page 42, then it's OK!)*

PG13	**Plasma Generator Kit**	**$64.95**
PS21	**16VAC Output Power Adapter**	**$19.95**

Ion Generator KIT

- ✔ Generate negative ions along with a blast of fresh air, without any noise!
- ✔ Generates a steady state DC voltage at a constant current, not pulsed!
- ✔ Generates 7.5kV DC negative, 400uA. That's a lot of ions!

Generate A Breath Of Fresh Air!

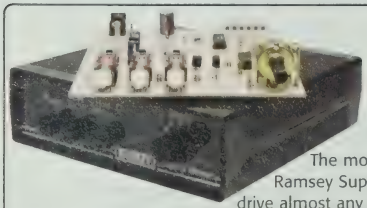


This nifty kit includes a pre-made high voltage ion generator potted for your protection, and probably the best one available for the price. It also includes a neat experiment called an "ion wind generator". This generator works great for pollution removal in small areas (Imagine after Grandpa gets done in the bathroom!), and moves the air through the filter simply by the force of ion repulsion! No fan blades, no noise, just swiftly moving, charged air. Gee, have we heard of this technology on a boatload of air cleaner infomercials lately?

Learn how modern spacecraft use ions to accelerate through space. Generate negative ions for health and healing! Includes ion power supply, 7 ion wind tubes, and mounting hardware for the ion wind generator. *Caution...do not grab the output of the transformer, all the ions may be sucked out of your body! And don't you just hate it when that happens!*

IG7	**Ion Generator Kit**	**$64.95**
AC125	**110VAC Power Adapter**	**$9.95**

KIT Stepper Motor Driver



Finally...A Stepper For All Those Surplus Motors!

- ✔ Controls direction, step size, and power to the motor
- ✔ Output drives 5 to 15 volts
- ✔ Uses Motorola Stepper Motor Driver IC Chip

The motors are top quality, but how the heck do you drive them without shelling out a fortune? Easy, with the Ramsey Super-Stepper! Build an accurate positioner, X-Y controller, plotter or even a Robot! The Super-Stepper will drive almost any stepper from 5 to 15 volts. You'll be able to control direction, speed, step size (rotational increment), and even power-down the motor after rotating it. An on-board clock generator is provided for easy hook-up-and-go operation or you can externally drive the kit for more exotic control. We give complete details and ideas for additional uses. Put those versatile, first rate (and cheap!) motors to work with this exciting kit. Includes the matching black custom case set. Operates on 5 to 15 VDC. Case size 5"W x 1½"H x 5¼"D. *(So why is the Stepper Motor under the neat zapping kits above? I had 2.35" of space and it's been a long day! Same for the next page!) Editor with a headache!*

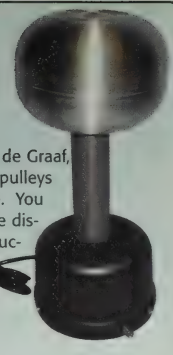
SMD1C	**Stepper Motor Driver Kit With Case**	**$34.95**
AC125	**110VAC Power Adapter**	**$9.95**

200 kV Van deGraaf Generator

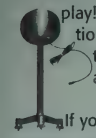
Wired & Tested KIT

- ✔ 200,000 volt potential!
- ✔ Sparks up to 5"!
- ✔ Operates in high humidity!
- ✔ Available kit or assembled & tested

Dazzle Them With Huge Sparks! Make Their Hair Stand Up On End!



Create your own lightning with these time-tested devices that have delighted students for decades! Named after the inventor Van de Graaf, a German physicist, this machine produces low-amperage static electricity that can be "shocking" but perfectly safe. Two different pulleys with 2 neoprene belts inside a 1¾" plastic column create and carry a static charge up to the 7" polished aluminum collector globe. You can draw out this static charge in a burst of lightning, sparks, or you can even set each hair on your head on end! It's an incredible display! The entire unit is 18" tall, runs on 110VAC, and includes a ground clip for discharge wands. Our comprehensive instruction book tells you how to raise hair, produce lightning and electric wind, experiment with St. Elmo's fire or electrostatic attraction and repulsion. For a stunning display use the matching "discharge wand" with your VG200 and watch the sparks fly between the two globes!



VG200W Discharge Wand

If you're looking for a really neat experience and want to learn the basics at the same time, the Van deGraaf generator kit is for you. If you can't wait to build it and just want to have a ball with the sparks, we even offer it factory assembled and tested! Your choice! If 200 kV isn't enough zap for you, check out our VG400 below! *(So we got these in, our techs set one up, and they called me to make my hair stand up on end....wait, my hair fell out when I was 22!)*

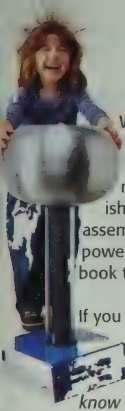
VG200	**200 kV Van deGraaf Generator Kit**	**$119.95**
VG200WT	**Factory Assembled & Tested VG200**	**$139.95**
VG200W	**Matching Discharge Wand, 1.3' Rod**	**$59.95**

400 kV Van deGraaf Generator

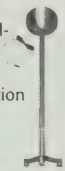
Wired & Tested

When 200,000 Volts... Just Isn't Enough!

- ✔ Super high output, 400,000 volt potential!
- ✔ Generates sparks up to 12"!
- ✔ Heavy duty construction throughout
- ✔ Factory assembled & tested



What's the matter, our 200 kV Van deGraaf doesn't have enough "stooch" for you? You want even more of your hair to stand straight up? You want foot long sparks? Well, for you die-hard shock fans, here you go; how does 400 kV sound? Just like its little brother the VG200, it can create lightning and make hair literally stand up on end! The VG400 produces up to 400,000 volts with special neoprene belts inside a 3" diameter transparent butyrate column to carry the 10 microamp charge up to the whopping 13" polished aluminum globe! It proudly stands 35.5" tall with a very heavy metal base for rock stable operation. The foolproof brush assembly never needs adjustment to guarantee flawless operation...and lots of sparks! The VG400 runs on 110VAC, and includes a power cord, on/off switch, and a grounding terminal for discharge wands. Just like the VG200 we include a comprehensive instruction book that nicely describes all the experiments and displays you can produce.



VG400W Discharge Wand

If you really want to put on a show use the matching VG400W discharge wand and watch the action between them! It's incredible and produces a fantastic display! The high power VG400 is available factory assembled and tested only to assure you perfect and safe operation. When you receive it, just plug it in and you'll have a hair-raising experience...we guarantee it! If you have a hankering to safely play around with 400,000 volts, then the high power Van deGraaf generator is for you. *(You do know what stooch is, right?)*

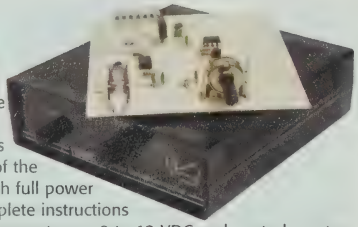
VG400WT	**400 kV Van deGraaf Generator, Factory Assembled & Tested**	**$439.95**
VG400W	**Matching Discharge Wand, 2.6' Rod**	**$69.95**

DC Motor Speed Control

KIT

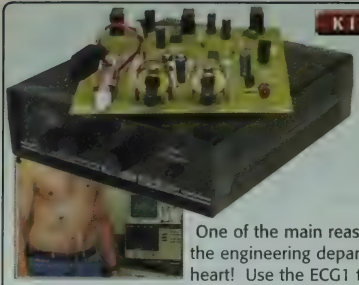
Full Power... Any Speed!

- ✔ Real pulse width modulation for accurate, stable motor control
- ✔ Controls DC motors from 3 to 50 volts - up to 10 Amps!



You see, controlling a DC motor's speed is not as easy as varying its supply voltage. The motor loses torque (power) as the voltage is lowered and it finally stops rotating. The MSC1 uses a technique known as "Pulse Width Modulation" - PWM - to control speed. This is the same system used on electric cranes, buses and subway cars. With PWM the motor receives full voltage whenever energized - however, the duration of the voltage changes; it's sort of like flipping an on/off switch very rapidly! The motor rotates smoothly and with full power - no matter what the speed. The MSC1 will control DC motors from 3 to 50 volts at up to 10 amps! Complete instructions detail how the PWM circuitry operates and some hook-up ideas. Assembly takes only an hour or two. Kit operates on 9 to 12 VDC and controls motor supply of 3 to 50 volts. Includes our custom case set measuring 5"W x 1½"H x 5¼"D. *(To our friend that tried to use this to control 480V/100A industrial motors...sorry about the melted case!)*

MSC1C	**DC Motor Speed Control Kit With Case**	**$34.95**

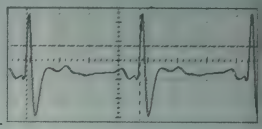


KIT Wired & Tested

Electrocardiogram Heart Monitor

Check Your Own Heart & Stay Healthy!

- ✔ Visible and audible display of your heart rhythm
- ✔ Re-usable sensors included; just like visiting the lab at the hospital!
- ✔ Bright LED "Beat" indicator for easy viewing
- ✔ Monitor output for professional display on your oscilloscope
- ✔ Simple and safe 9V battery operation



One of the main reasons we designed the ECG1 was to answer a long running debate here in the engineering department. We wired up the "Boss" and finally confirmed he does not have a heart! Use the ECG1 to astound your physician with your knowledge of ECG/EKG systems. Enjoy learning about the inner workings of the heart while at the same time covering the stage-by-stage electronic circuit theory used in the kit to monitor it. The three probe wire pick-ups allow for easy application and experimentation without the cumbersome harness normally associated with ECG monitors. The documentation with ECG1 covers everything from the circuit description of the kit to the circuit description of the heart! Multiple 'beat' indicators include a bright front panel LED that flashes with the actions of the heart, an adjustable level audio speaker output supporting mono or stereo hook-ups, and a monitor output to view the traditional style ECG/EKG waveforms you see on ER... or in the ER!

The fully adjustable gain control on the front panel allows the user to custom tune the differential signal picked up by the probes giving you a perfect reading every time! Includes the matching custom case set shown, and operates on a standard 9VDC battery (not included). This is NOT a medical device; it is intended for hobbyist usage only. If you experience any symptoms, seek medical help immediately! *(Editors note: This kit is not intended for catalog editors and webmasters of Ramsey Electronics; it's just way too late!*

ECG1C	**Electrocardiogram Heart Monitor Kit With Case**	**$44.95**
ECG1WT	**Factory Assembled & Tested ECG1 With Case And Power Supply**	**$89.95**
ECGP10	**Set of 10 Replacement Reusable Probe Patches**	**$7.95**

Solar Generator Briefcase

Wired & Tested

NEW!

- ✔ Powerful 13W generators!
- ✔ 14VDC, 750mA
- ✔ Folding briefcase design

Steal From The Sun!

So you're outdoors away from the nearest electrical outlet and you need power. What do you do? Until now you had to have a small gas powered generator. That gets a tad bit bulky, heavy, and with the fuel needed, dangerous. Those days are gone! Carry along your Solar Briefcase and capture the power from the sun... it's free!

This incredibly handy package of power is great to run laptops, small electric hand tools, DC refrigerators, GPS systems, portable electronics, and a whole lot more! It's also great to charge your batteries. The two powerful solar panels generate 13 watts of power. That's 14VDC at a working current of 750mA! That's more than the average plug-in power supply! Detachable connectors are provided for a variety of applications. The briefcase design measures 20.1" x 14.7" x 1.6" and weighs a scant 9.7 lbs.

SOL8	**Solar Generator Briefcase, Factory Assembled & Tested**	**$139.95**

NEW!

Keep Your Battery Charged!

Wired & Tested

Solar Trickle Charger

- ✔ Works with any vehicle!
- ✔ Easy window or visor mounting!
- ✔ Easy connections

We've all been there; your car sat in a parking lot for a week or so, you came back and the battery was flatter than a pancake! It doesn't take much to drain a battery down if the vehicle is not run. Whether you know it or not, today's vehicles have electronics draining the battery 24/7 whether the car is on or off.

Now you can rest assured you will never have a dead battery! Just keep this handy solar trickle charger plugged into your accessory power jack (cigarette lighter plug for those of you that don't know the new name!) and you are all set. Built-in protection prevents current reversal. Provides 14.5VDC at 125mA. Comes complete with cigarette lighter plug, battery clamps, and window suction cup mounts. If your car sees the sun, your car's battery will never be dead! Measures 13.4" x 4.7" x 0.6", perfect for a sun visor.

SOL5N	**Solar Vehicle Trickle Charger, Factory Assembled & Tested**	**$26.95**

Mini-Kits...Fast, Easy, FUN!

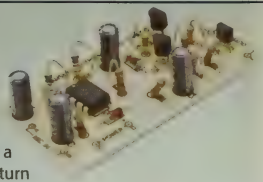
Mini-Kits are handy, easy-to-build, easy-to-use, functional kits that can be used alone or as building blocks in larger, more complex designs.

Automatic VOX Voice Switch

KIT

- ✔ Use your voice or noise to control!
- ✔ Directly switches relays or low voltage loads up to 100mA!
- ✔ Endless applications!

Automatic Voice Control!



Our most popular Mini-Kit, the VS1 Voice Activated Switch (VOX) will provide a switched output when it "hears" sound. Use it to key a transmitter for hands-free PTT, turn on a tape recorder automatically when people are talking in a room, turn on lights or anything else for that matter at the sound of your voice! How about having your garage lights turn on when you beep your horn? The possibilities are endless. The output drives up to a 100mA load such as a relay, tape recorder control line, transmitter PTT line, etc. Runs on 6-12VDC for easy integration into any equipment. Board measures 2½" x ½" x 1¼".

VS1 **Automatic Voice Activated VOX Switch Kit** **$9.95**

Super Snoop Amplifier

- ✔ High sensitivity, long distance listening!
- ✔ Powerful 2W audio output!

Super High Gain!

Here's a super sensitive amplifier that will pick up a pin drop at 15 feet! It's an ideal general purpose amplifier, too. Full 2 watts audio output is great for boosting low power receivers and radios, and when wired for high gain, makes an excellent room monitor or "big ear" mic amp... easy to listen in on "wildlife" both in the field and in the city! Runs on 6-15VDC at 500mA. Drives any speaker. Measures 1½" x ½" x 1½".

BN9 **Super Snoop Amplifier Kit** KIT **$9.95**

LED Red Blinky

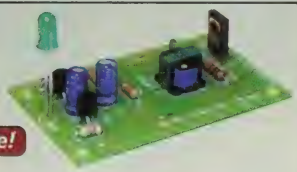
- ✔ Tweak a child's interest!
- ✔ Perfect 1st learning kit!
- ✔ Thousands and thousands sold!

Great Starter Kit!

Alternately flashes two jumbo red LEDs; this is the kit you've seen on name badges, buttons, hats, and toys. But, there's more to it than that. Add a couple of relays and Christmas light strings and you've got yourself a super light chaser just like the theater marquee. Or add a zener diode and make an attention getting overvoltage warning light. Runs on 3-5 VDC, typically a 9V battery (not included). Used throughout the world as the first learning kit for students young and old. Measures 1" square.

BL1 **LED Red Blinky Kit** KIT **$7.95**

Tickle-Stick



- ✔ Shocking but harmless fun!
- ✔ You'll let go quick
- ✔ Teasing LED indicator!

Get The Shock Of Your Life!

Tickle or stimulator - take your pick... once you grab it, you'll let go quick!! Mount this little kit plus a secret switch - like a mercury tilt switch - in an ingenious can or box and watch the fun. Adding a bright ribbon bow is remarkably effective at baiting the unwary! The kit has a pulsing 80 volt tickle output and a mischievous blinking LED. And who can resist a blinking light! Great fun for your desk, workbench, or coffee table... "Hey, I told you not to touch!". Runs on 3-6 VDC battery power (not included). This kit has become a fixture at our Hamfest displays, providing us, and others who are in the know, hours of fun! PC board measures 1½" x ¾" x 2½".

TS4 **Tickle Stick Kit** KIT **$12.95**

Electronic Siren

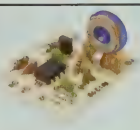
- ✔ Just like the police cars!
- ✔ 5W audio output!

Here Come The Cops!

The SM3 siren exactly duplicates the upward and downward wail of a police siren. Runs on 6-12 VDC and is a loud 5 watts. Drives any speaker, but a horn type gives best results. Surprise your kids, or wife - if you live dangerously.

SM3 **Electronic Siren Kit** KIT **$7.95**

Universal Timer



- ✔ Trigger or oscillator
- ✔ 555 timer IC design

IC Switching...$10!

Add a time delay, keep something on for a preset time, provide timing or clock pulses, or provide an audio tone. The UT5 does it all using the famous 555 timer IC. Comes with detailed learning instructions for many applications. Runs on 5-15VDC and controls up to 100mA.

UT5 **Universal Timer Kit** **$9.95**

Warble Alarm

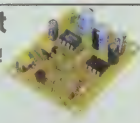
- ✔ 15W of power!
- ✔ Real attention getter!

Our "Mad Blaster"

If you need to simply get attention, the "Mad Blaster" is the answer, producing a LOUD ear shattering raucous racket! Super for car and home alarms as well. Drives any speaker but a horn type provides the loudest sound. Runs on 9-12VDC. Measures 1 1/8" x 1¼" x ½".

MB1 **Warble Alarm Kit** **$9.95**

Dripping Faucet



- ✔ Repeated "Plink" sound!
- ✔ A pleasant alarm!

Drip, Drip, Drip!

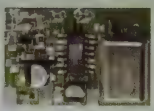
Somewhere between a dripping faucet and electronic "chime" in a new car! Just like a drip into a bowl of water! Use it where a unique sound is needed. Learn how a simple oscillator works too! Drives any speaker. Runs on 4-9VDC. *(That O-Ring kit won't fix this one!)*

EDF1 **Dripping Faucet Kit** **$9.95**

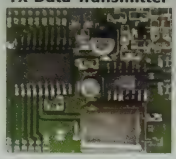
RF Wireless Link Modules

Wired & Tested

TX Data Transmitter

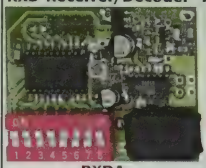


RX Data Receiver

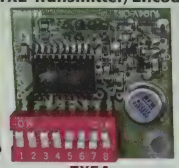


RXD Receiver/Decoder

TXE Transmitter/Encoder



RXDA
Receiver/Decoder



TXEA
Transmitter/Encoder

Let These Modules Do All The Work In YOUR Next Project!

- ✔ **The EASY way to send and receive data!**
- ✔ **433MHz and 916 MHz units available!**
- ✔ **Transmitters, receivers, encoders, decoders**
- ✔ **Factory assembled & tested SMT design**

Now you can build those special remote control projects in a flash, and have the ultimate in reliability...and security! Unlike other units on the market, these units are crystal controlled for no frequency drift, yet are ultra small and very low power. These wireless RF link boards are perfect for any wireless application- sending data, car alarms, door openers, home security, electronic monitoring... you name it. Monitor a test point or an alarm point on a circuit and have it alert you remotely; the applications are endless!

Optional encoder/decoder models allow you to program each unit so that they only respond to your set code. Great for encoding sensors or controlling various functions wirelessly - no other processor or computing required! All modules are pre-assembled and tested so you can start your project today!

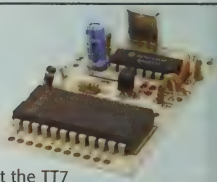
Two versions are available - 433 MHz and 916 MHz. 916 units can use shorter antennas (3 inches) and are better in high RF environments, while the 433 units have better range but need larger antennas (7 inches). The A-Series modules include a programmable dip switch for encoder/decoder settings, and common dual row pin-outs for easy integration into your equipment! *(No, these do NOT send audio or video!!! There, saved you the email!)*

RXD433A	**433 MHz Receiver/Decoder Module w/Dip Switch**	**$39.95**
TXE433A	**433 MHz Transmitter/Encoder Module w/Dip Switch**	**$37.95**
RXD433	**433 MHz Receiver/Decoder Module, Assembled**	**$34.95**
TXE433	**433 MHz Transmitter/Encoder Module, Assembled**	**$32.95**
RX433	**433 MHz Data Receiver Module, Assembled**	**$29.95**
TX433	**433 MHz Data Transmitter Module, Assembled**	**$24.95**
RXD916	**916 MHz Receiver/Decoder Module, Assembled**	**$34.95**
TXE916	**916 MHz Transmitter/Encoder Module, Assembled**	**$32.95**
RX916	**916 MHz Data Receiver Module, Assembled**	**$29.95**
TX916	**916 MHz Data Transmitter Module, Assembled**	**$24.95**

DTMF Touch Tone Decoder

KIT

Your Phone Is Your Encoder!



- ✔ **Decodes DTMF Touch Tones from telephones, radios, etc!**
- ✔ **20mA output drives relays, LEDs, digital devices and more!**
- ✔ **Decodes 0 through 9, *, #, plus A, B, C, D**

You can strap the TT7 for detection of any single digit, including the secondary A,B,C,D digits. When the decoder detects the selected digit it will provide a closure to ground for driving a relay, lamp, sounder, or other load of up to 20 mA. A commercial central office quality decoder IC chip is used, making the TT7 extremely reliable, fast, and sensitive. You may connect the TT7 directly across the speaker or detector output on any receiver, and in fact, we even detail how it may be connected directly to a telephone line. If your needs are single function remote tone control, the TT7 is for you. (For digital display of dialed touch-tone numbers, use our TG2 Tone Grabber on page 32, for remote control use our DCI series, also on page 32). Runs on 5VDC. PC board measures 1½" x 7/8" x 2¼".

TT7	**DTMF Touch Tone Decoder Kit**	**$24.95**

Tone Encoder/Decoder

KIT

Encode and Decode With The Same Kit!

- ✔ **Encodes and decodes 40 to 5000Hz!**
- ✔ **Drives any load up to 100mA!**
- ✔ **Compact size and easy installation**

The TD1 was engineered to provide all your tone control needs on a single PC board! The unique design will simultaneously encode and/or decode any audio frequency between 40Hz and 5000Hz. If you want to go even lower we provide the documentation to change one capacitor to go down to 10Hz! This little board is great for 2-way radio "PL" tones, remote controls, tone burst FSK or anywhere tones are involved. Frequency is easily set with the precision 20 turn trimpot, and the circuit uses a voltage regulator and Mylar cap for the ultimate in stability. The decoder output will drive any load up to 100mA making it simple to connect to your equipment. Runs on 5-12 VDC , will drive up to 100 mA load. Encoder output provides apporoximately 1V P/P output to easily drive your application. PC board measures 1¼" x ½" x 1½".

TD1	**Tone Encoder/Decoder Kit**	**$9.95**

Touch Switch

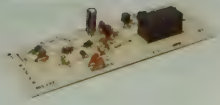
- ✔ Touch on, touch off, or momentary!
- ✔ Two circuits on one board
- ✔ Great CW Keyer

2 Separate Circuits!

The ultimate touch switch! Touch once - it's on, touch again - it's off, or use the momentary outputs that stay on only as long as touched. Uses low power CMOS circuitry and functions on the principle of hum and noise pick-up when input is touched. There are two completely independent touch switch circuits on each board. It's like getting two for the price of one! Will drive loads up to 100 mA such as a relay, bell, siren, etc. Includes project info for use as a CW keyer. Runs on 6-12VDC.

TS1 Touch Switch Kit KIT **$9.95**

RF Actuated Relay



- ✔ Automatically senses RF presence!
- ✔ On-board DPDT relay
- ✔ Protects against RF input damage

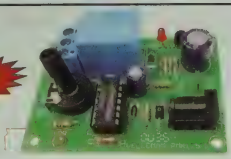
Senses RF BEFORE The Damage!

This is just the unit you need when adding a preamp or power amp in line with an existing antenna. It senses the RF power and closes an on-board DPDT relay which can be used to automatically switch in your added power amp or preamp. The relay is good up to UHF at 100W! Besides radios, many folks use one of these "lifesavers" in front of their expensive test equipment to prevent RF input damage! Runs on 10-15VDC and senses power as low as 50 mW. Size: 1½" x ½" x 4".

RFS1 RF Actuated Relay Kit KIT **$19.95**

Light Actuated Switch

NEW!



- ✔ On-board SPDT relay!
- ✔ On at dusk, off at dawn
- ✔ Adjustable sensitivity

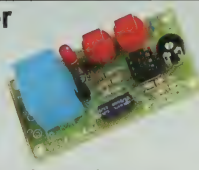
Fully Automatic!

Tired of turning your lights on and off? Tired of paying the ever increasing cost of electricity because you forgot to turn them off in the morning? Consider it solved! The MK125 is a simple little kit that automatically senses light and automatically closes the on-board SPDT relay. Light sensitivity is adjustable over a wide range, and a delay circuit prevents recycling. Relay contacts rated at 5A. Runs on 12VDC. Board measures 2.6" x 2". From Velleman.

MK125 Light Actuated Switch Kit KIT **$7.95**
AC125 110VAC Power Adapter **$9.95**

Universal Start/Stop Timer

NEW!



- ✔ Delay up to 60 minutes!
- ✔ On-board relay
- ✔ Runs on 12VDC

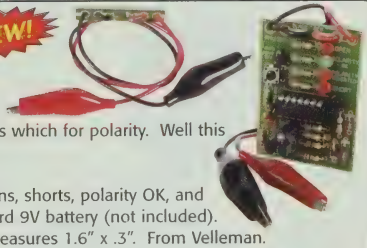
Start & Stop With Delay!

The K2579 is a miniature timer for any application that requires a start and stop function with a delay. Board mounted switches are provided for both start and stop. Time interval is variable and adjustable from 0 to 15 minutes, and extendable to 60 minutes with a modification. LED status indicator is provided. Relay is rated at 2A/240VAC max. Runs on 12VDC. Board measures 1.5" x 2.7". From Velleman.

K2579 Start/Stop Timer Kit KIT **$12.95**
AC125 110VAC Power Adapter **$9.95**

Cable Polarity Checker KIT

NEW!



- ✔ Checks continuity & polarity!
- ✔ Auto power off!
- ✔ Pushbutton operation!

Which Way Should It Go?

We've all been there. You're running speaker wires through your house and you don't know which wire is which for polarity. Well this neat little kit takes care of it!

Simply hook up the remote board to one end and the main board to the other end. LEDs show you opens, shorts, polarity OK, and polarity reversed! It's that simple! A lot of uses besides speaker cables, think about it! Runs on a standard 9V battery (not included). Features auto power-off for long battery life. Main board measures 2.2" x 1.6" while the remote board measures 1.6" x .3". From Velleman.

MK132 Cable Polarity Checker Kit **$7.95**

NEW!

Water Alarm KIT

Find Out BEFORE You're Flooded!

- ✔ Sounds alarm when water is present!
- ✔ Can be remotely located!
- ✔ Includes buzzer alarm

So the sump pump quits and because you don't live in your basement you're never the wiser. The result? A flooded basement and a lot of damaged things that are *in* the basement! And once that happens things never seem to be the same.

Now build a cute little water sensor alarm to let you know! Simply mount the alarm in the area you want to sense water and the moment it touches the contacts the included alarm will sound. No wires, no external alarm system, nothing but this tiny little board just waiting to alert you! The sensor can be remotely located by cutting that section of the board if desired. Runs on 9V battery (not included) Size: 1.8" x 2.8". From Velleman.

MK108 Water Sensor Alarm Kit **$7.95**

Symmetric 1A Power Supply

- ✔ Plus & minus 1.2V to 24VDC!
- ✔ Thermal protection
- ✔ Just add a transformer & heatsink

Low Cost, Ready To Go!

NEW!

The K8042 is a great little symmetric power supply designed to provide ±1.2 to 24VDC regulated at 1A. Perfect for amplifiers, op-amps, and other applications requiring a nicely regulated ±DC source. The circuit provides short circuit and thermal protection.

Wired & Tested

Just provide a suitable power transformer or AC source (up to 24V) and heatsink and you're all set. Features LED status indicators. Factory assembled and tested. Board measures 3.1" x 2" x .9". From Velleman.

K8042 Symmetric 1A PS, Assembled & Tested $13.95

Regulated 1A Power Supply

- ✔ 1.5 to 35VDC at one amp!
- ✔ LM317 regulator circuit
- ✔ Current and thermal overload protection

1 Amp Up To 35 Volts!

NEW!

If you're looking for a small power supply regulator and don't want to built it up from scratch, the K1823 is just for you! Designed around the LM317 regulator, it will provide a variable regulated output between 1.5 and 35VDC. Continuous output current is conservatively rated at 1A with a maximum output current of 1.5A. Maximum input voltage is 40VDC for rated output.. Both current and thermal overload protection is provided by the LM317. Heatsink is not included and is required for maximum rated output. Board measures 2.1" x 2.1". From Velleman.

K1823 1A Power Supply Board Kit KIT **$12.95**

RF Preamp

- ✔ Broadband from 100 KHz to 1000 MHz!
- ✔ High Gain: 16 db
- ✔ Low noise < 4dB !

We're Talking Broadband!

This is the famous preamp that's been written up in all the radio and electronics magazines. New low-cost microwave transistors make it possible to give performance unheard of a few years ago! Provides 16dB gain from 100kHz to 1GHz and is unconditionally stable! Runs on 12-15VDC at 15mA. Input and output impedance is 50-75 ohm. Measures 1" x 3/8" x 1½".

SA7 RF Preamp Kit KIT **$19.95**

AM/FM RF Preamp

NEW!

- ✔ 10MHz to 150MHz!
- ✔ Shielded metal housing
- ✔ Direct or line fed DC supply

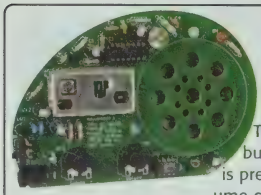
Amplify Those Signals!

Designed specifically for AM/FM radio reception, the K2622 provides 22dB gain between 10MHz and 150MHz. The sleek metal housing provides the necessary shielding and assures you of the least amount of interference. Input power is 12-15VDC at 2mA and can be powered directly or up the coax. Input/output impedance is 50-75 ohm. Measures 3.4" x 1.4" x .9". From Velleman.

K2622 AM/FM Preamp Kit KIT **$13.95**

Portable FM Radio Kit

KIT



Build It... Then Listen To It!

- ✔ Preassembled front end!
- ✔ No coils to wind!
- ✔ Includes everything!

The greatest part of building a kit is the enjoyment afterwards seeing and hearing the results of your work! Now you can build yourself a little FM radio receiver, learn about FM receivers, and have a neat little radio in the end! The RF front end is preassembled to make it simple. Receives the whole FM broadcast band of 88-108 MHz. Includes an on/off switch, volume control, speaker, and LED indicator. Runs on 12VDC. Measures 4.8" x 3.3". From Velleman.

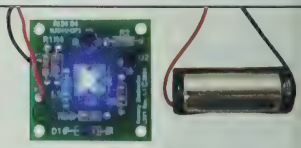
MK118 Portable FM Radio Kit $19.95
AC125 110VAC Power Supply $9.95

LED Switcher Blinky

KIT

- ✔ Run a 3V LED with 1.5V!
- ✔ Learn about switching supplies!
- ✔ Super bright Blue LED!
- ✔ Long battery life!

See... It IS Possible... And Learn How!



More than 30 years ago we came out with our ever famous BL1 Blinky kit. Thousands and thousands were built teaching people exactly how LEDs and transistor circuits work. Now we're going one step further! The LSW1 will show you how to light a 3V LED with a single 1.5V battery! The circuit is actually a very unique "switching power supply" which steps up the 1.5V battery voltage to around 5VDC! If you're new to switching power supplies this is the perfect little kit to get your feet wet!

If you're a serious hobbyist and want to see the neatest little circuit then you're in for a treat too! When you're all done you end up with a super bright Blue Telux™ LED running on 1.5V! But it doesn't blink you say? Sure it does...at 140kHz! Requires a single AA battery (not included). Board measures 1.5" x 1.5".

LSW1 LED Switcher Blinky Kit $14.95

Shortwave Converter KIT

- ✔ Receives and converts two (1 MHz wide) shortwave bands to standard AM band for listening on your existing AM radio
- ✔ Pushbutton switches provide easy selection of SW1, SW2 or AM Broadcast
- ✔ Tuning performed on AM radio
- ✔ Built-in antenna switching

Inexpensive Start To SWL!

The SC1 converter brings the sounds of the world right into your car radio or home stereo (set to receive AM broadcast band). Front panel push switches let you choose easily between regular AM radio and the shortwave bands. An additional switch allows the selection of any two bands of interest, each 1 MHz wide.

Set one range for daytime frequencies and one for nighttime when propagation is different; choose any two frequencies between 3 and 22 MHz. Frequencies are tuned on your AM radio, making it easy to log stations or set presets. A built-in antenna switch automatically switches the existing AM antenna to either the radio or converter, making hook-up/operation easy and fast. External power jack for 9 to12VDC is a standard 2.1mm female. Included case measures 5"W x 1½"H x 5¼"D.

SC1C	**Shortwave Converter Kit With Case**	**$39.95**
AC125	**110VAC Power Adapter**	**$9.95**

Shortwave Receiver KIT

The Perfect... "Beginner's Receiver"

- ✔ Tunable over 2 MHz bandwidth anywhere in the 4 to 20 MHz Shortwave Band
- ✔ Clean superheterodyne design with automatic gain control
- ✔ Extremely sensitive front end!

Here's a complete shortwave radio guaranteed to inspire awe in any listener. Imagine tuning in the BBC, Radio Moscow, Radio Baghdad and other services with just a few feet of antenna. This very sensitive (about a microvolt!) receiver is a true superhet design with AGC and plenty of speaker volume.

Smooth varactor diode tuning allows you to tune any 2 MHz portion of the 4 to 20 MHz frequency range, and the kit conveniently runs on a 9 volt battery (not included). Our matching custom case and knob set gives your radio a finished, polished look. Amaze yourself and others - see how you can listen to the world on a receiver you built in an evening. Drives any speaker or earphone. Included case measures 5"W x 1½"H x 5¼"D.

SR2C	**Shortwave Receiver Kit With Case**	**$44.95**

WWV Time Receiver KIT

- ✔ Receives 10 MHz WWV transmissions
- ✔ The world's time standard at your fingertips!
- ✔ Built-in speaker plus audio output jack
- ✔ Super-easy assembly with no tuning required!

Does Anybody Really Know... What Time It Is?

What time is it? This quality WWV receiver is designed to receive the 10 MHz National Institute of Standards (NIST) atomic clock - the sole time standard for the Planet! Very sensitive receiver needs only a few feet of wire to pick up WWV, utilizes unique Log/Anti-log detector circuitry for super-easy assembly, alignment, and operation.

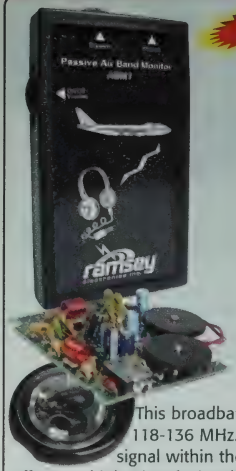
Detailed manual teaches theory of receiving systems - you'll be an expert after building this baby - and it only takes a few hours! Believe it or not, no tuning is required for operation! Runs on 9 volt battery, includes speaker, too. Crystal included for 10 MHz reception; change the crystal to receive other frequencies in the 5 - 15 MHz range. Includes a custom matching case set for a great finished look. *(Now I have that song stuck in my head...does anybody really care?!!*

HFRC1C	**WWV Shortwave Receiver Kit With Case**	**$44.95**

Neat Things Show Up In Transmitters & Receivers!

Just check out the new aircraft receivers on the next 2 pages!

And Check For More New Products Frequently At www.ramseykits.com



New For 2006

KIT — Wired & Tested

Passive Air Band Monitor

Monitors The Entire Band For Activity... Without Any Tuning!

- ✔ **Monitors the entire aircraft band without tuning!**
- ✔ **Passive design, can be used onboard aircraft, no local oscillator, generates and creates no interference whatsoever!**
- ✔ **Great for air shows!**
- ✔ **Patented circuit and design!**

For decades we have been known for our novel and creative product designs. Well, check this one out! An aircraft receiver that receives all nearby traffic without any tuning. It gets better... there is no local oscillator so it doesn't produce, and can't produce, any interference associated with all other receivers with an LO. That means you can use it onboard aircraft as a passive device! And what will you hear? The closest and strongest traffic, mainly, the one you're sitting in! How unique is this? We have a patent on it, and that says it all!

SPECIFICATIONS

Frequency Range:	118 MHz to 136 MHz
Receiver Type:	Patented Passive Detector
IF Frequencies:	None!
Receiver Sensitivity:	Less than 2 uV for detectable audio
Audio Output:	700mW, 8-24 ohms
Headphone Jack:	3.5mm stereo phone
External Antenna:	Headphone cord coupled
Power Requirement:	9VDC battery
Dimensions:	2.25" x 2.8" PC Board 2.5" x 4.6" x .9" Case
Weight:	4 oz. with battery

This broadband radio monitors transmissions over the entire aircraft band of 118-136 MHz. The way it works is simple. Strongest man wins! The strongest signal within the pass band of the radio will be heard. And unlike the FM capture effect, multiple aircraft signals will be heard simultaneously with the strongest one the loudest! And that means the aircraft closest to you, and the towers closest to you! All without any tuning or looking up frequencies! So, where would this come in handy?

1. ***At an air show! Just imagine sitting there listening to all the traffic as it happens, even the unknown frequencies!***
2. ***Onboard aircraft to listen to that aircraft and associated control towers***
3. ***Private pilots to monitor ATIS and other field traffic during preflight activities (saves Hobbs time!)***
4. ***Commercial pilots to monitor ATIS and other field traffic as needed at their convenience***
5. ***General aircraft monitoring enthusiasts***

Wait, you can't use a radio receiver onboard aircraft because they contain a local oscillator that could generate interfering signals. We have you covered on that one. The ABM1 has no local oscillator, it doesn't, can't, and won't generate any RF whatsoever! That's why our patent abstract is titled "Aircraft band radio receiver which does not radiate interfering signals". It doesn't get any plainer than that!

What about an air show? The ABM1 is the perfect solution to communications monitoring! A lot of unknown frequencies are used between the ground and each plane flying. Listen to air-to-air, the air boss, PA talkthrough and the stunt planes with ease! With a normal receiver you need to know the frequency and tune into it. The ABM1 simply hears the activity as it occurs, perfect for an air show... should be standard equipment for all the spectators!

Then there are the private and commercial pilots! A lot of private pilots rent aircraft. With an ABM1 they can listen to field traffic and ATIS broadcasts before firing up the aircraft avionics; this saves on Hobbs time (inactive rental time!) and is convenient! Same with commercial pilots. Your access to ATIS and other broadcasts can be as close as your flight bag, briefcase, or pocket!

The receiver is in a compact case complete with a belt clip. Just plug your favorite pair of headphones or the provided set of ear buds into the receiver, turn it on, and you are now monitoring all local aircraft! A squelch control is even provided to mute background noise and interference! The receiver runs on a standard 9VDC battery (not included). You will hear all nearby aircraft, ground transmissions, local control towers, and any other traffic within the frequency range! Here in Rochester while I'm writing this catalog page I'm hearing local aircraft overhead calling Rochester Approach and Cleveland Center, and just heard the local News Chopper!

Even with its compact design, we designed the ABM1 for easy construction by the electronic hobbyist. Thru-hole parts are used for all customer assembly. Several SMT components are part of the circuit, and they are pre-installed at the factory! Where's the antenna you ask? The headphone wire is your antenna! We even discuss a couple of component changes you can make to optimize performance with other than normal lengths of headphone wires. A professional set of stereo ear buds is included with the ABM1 to get you listening quick! You can also use your favorite set of Walkman type headphones with the ABM1. A factory assembled and tested SMT version with additional shielding for adjacent channel overloading is also available for the aircraft professional that just wants to get listening quickly.

If you're a private pilot, commercial pilot, airport worker, aircraft enthusiast, attend air shows, or spend a lot of time in airports or onboard aircraft, the ABM1 is for you.

ABM1	**Passive Air Band Monitor Kit**	**$89.95**
ABM1WT	**Passive Air Band Monitor, SMT Construction, Factory Assembled & Tested**	**$159.95**

Digital Tuned High Performance Aircraft Receiver

New For 2006

Wired & Tested

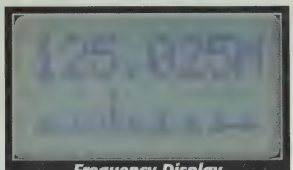
KIT

- ✔ Rock solid dual conversion PLL receiver!
- ✔ Airport runway lighting controller output!
- ✔ Full band scanner mode
- ✔ 4 user memory scanner banks, 20 frequencies each
- ✔ Full band skip scanner mode
- ✔ Adjustable skip scanner timing
- ✔ Internal front panel speaker
- ✔ External antenna input, speaker out, headphone out
- ✔ Stylish and shielded metal enclosure

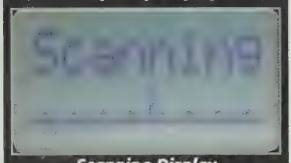
The Ultimate & Affordable Aircraft Receiver... Even Controls Runway Lights!

SPECIFICATIONS	
Frequency Range:	117.975 MHz to 137.000 MHz 25kHz steps
Receiver Type:	Dual Conversion PLL
IF Frequencies:	10.7 MHz & 450 kHz
Receiver Sensitivity:	Less than 1 uV across the band
Image Rejection:	Greater than -80 dB
Adjacent Ch. Rejection:	Greater than -40dB
Scanner Banks:	4, 20 frequencies each
Audio Output:	1 watt, 8 ohms
Light Controller Output:	3 events, 5 events, 7 events output to controller
Power Requirement:	12VDC, 500mA
External Antenna:	BNC female, rear panel
Dimensions:	5.55"W x 6.45"D x 1.5" H

Continuing the legacy of our famous AR1 we decided to design the ultimate aircraft receiver kit. Now you're not limited to an all band receiver or scanner that has sub-standard performance in the AM aircraft band, but instead can have a super performance receiver designed specifically for the best aircraft reception possible! To begin with, we designed it with the latest technology, utilizing a rock stable synthesized PLL dual conversion receiver. We gave it superb image and adjacent channel rejection to allow you to lock onto the signals you want and not to be bothered by those you don't!



Frequency Display



Scanning Display

Once we got the RF portion designed we took a close look at the features desired in such a receiver. We gave it a neat 2x8 line LCD display to show you all the functions. Control of modes and setups is obtained through the front panel controls and confirmed on the LCD display. On/Off/Volume and Squelch controls are also provided on the front panel. We even gave it a front panel speaker in case you stack the lighting controller or something else on top of it!

So far we've described the ultimate aircraft receiver that's not only the perfect field monitor for a hangar or airport manager's office, but for the serious enthusiast. Can it get any better than that? It sure can!

The top request we've had for a professional aircraft receiver was to embed automatic runway lighting control. Consider it done! The lighting controller follows the standard protocol for remote runway lighting. The pilot "keys" his microphone on the local CTAF channel for the specified number of times. All you need to do is set the receiver for the lighting control mode, then make sure the squelch is closed and will open on a suitably strong signal. Typically the number of "keys" or "events" according to the receiver control the lighting as follows: 3 events, 25% brightness; 5 events, 50% brightness; and 7 events, 100% brightness. The AR2's adjustable lighting timer sets turn-on duration to your needs.

And what happens in the event of a local power failure or interruption to the AR2? Absolutely nothing! All receiver settings and all lighting control settings are saved in the internal memory. The rear panel lighting control output of the AR2 connects to our AR2LC to interface with individual runway lighting control circuits.

As we do with all of our kits, a detailed instruction manual not only leads you through the step-by-step construction and assembly procedures, it teaches you the circuit theory as well. Learn all about RF receivers and how a dual conversion PLL radio works! You'll be proud to tell your friends that you built this outstanding aircraft receiver!

Includes the matching case and knob set and power supply. For the aviation professional that is not interested in building the receiver, the AR2 and the lighting controller are also available factory assembled and tested, ready to go. Just plug it in and you're all set. *(I can't get this thing off my desk, now I'm addicted to listening to Rochester approach!)*

AR2	**Synthesized Aircraft Receiver Kit With Case and AC Power Supply**	**$199.95**
AR2WT	**Factory Assembled AR2C With Case and AC Power Supply**	**$269.95**
AR2L	**Plug-In Runway Lighting Controller Interface Kit With Case & Power Supply**	**$59.95**
AR2LWT	**Factory Assembled AR2LC With Case and AC Power Supply**	**$99.95**

Kit Planes Magazine...
"Puts You In The Pilot's Seat!"

KIT Aircraft Receiver

- ✔ **Picks up aircraft, control towers, and more!**
- ✔ **Tunes entire 118 MHz to 136 MHz Aircraft band**
- ✔ **Automatic gain and squelch controls**

Tune into the exciting world of aviation and learn the circuits at the same time with the AR1C Aircraft Receiver! As the feature article in Kit Planes Magazine said "It Puts You In The Pilot's Seat"! Listen to the airlines, big business corporate jets, hotshot military pilots, local private pilots, control towers, and other interesting and fascinating air-band communications. You'll hear planes miles away as well as all local traffic and control towers.

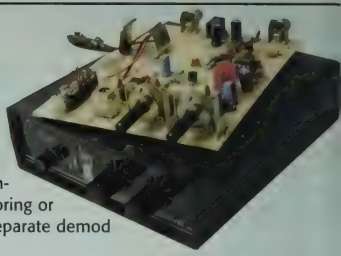
The AR1C features smooth varactor tuning of the entire air band from 118 to 136 MHz. An extremely effective AGC and superheterodyne circuitry make it a super performing unit. Variable squelch mutes the receiver between conversations. Audio output jack drives any standard speaker or headphone. Includes our custom case & knob set as shown for a great looking finished receiver! Operates on 9 VDC battery (not included). Case measures 5"W x 1½"H x 5¼"D.

AR1C **Aircraft Receiver Kit With Case** **$44.95**

FM Broadcast Band Receiver KIT

- ✔ **Standard FM receiver, with larger tuning range of 70 to 110 MHz**
- ✔ **Ideal for FM wireless mikes, SCA programming, or standard FM broadcasts**
- ✔ **Demodulated audio output for driving our SCA1 decoder**

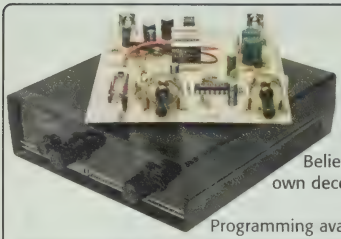
Perfect For "Out Of Band" Listening!



With a frequency range of 70 MHz to 110 MHz the FR1C has become extremely popular for receiving the standard FM broadcast band (88-108 MHz) as well as large portions on each side, making it great for bug monitoring or detection and receiving SCA broadcast outside of the band. Unlike most FM receivers, the FR1C includes a separate demod output (unfiltered) to drive SCA decoders including our SCA1 SCA Decoder below.

The sensitive front-end features one microvolt sensitivity with a standard 10.7 MHz IF. An FM detector IC is used along with varactor diode tuning for optimum performance. Audio output is rated at 250mW and will drive any 4-45 ohm speaker or headphone (not included). Runs on a standard 9VDC battery (not included). Includes our matching custom case set, measuring 5"W x 1½"H x 5¼"D.

FR1C **FM Broadcast Band Receiver Kit With Case** **$34.95**



How Do They Get That Commercial Free Music?

KIT SCA Subcarrier Decoder

- ✔ **Tunes entire SCA subcarrier band, 50 to 100 KHz**
- ✔ **Features both speaker and line level audio outputs**
- ✔ **Simply plugs into our FR1 FM broadcast receiver or tap into the detector in any FM receiver**

Believe it or not, they get it off the local FM radio station, but with a special decoder. Now you can build your own decoder and tap into the wealth of programming available to those "in-the-know" !

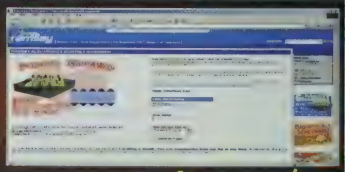
Programming available runs the gamut from stock quotes, to rock music, to easy listening, to all news. These services are "hidden" in subcarriers riding along with the standard FM radio station's usual programming. The decoder connects to the detector output (unfiltered audio) on an FM receiver. If your receiver does not have such an output, consider our FR1C FM Receiver above! Tune into what you've been missing, try the SCA1. Includes a custom case set to match the FR1C receiver above. Runs on a standard 9VDC battery. Case measures 5"W x 1½"H x 5¼"D.

SCA1C **SCA Decoder Kit With Case** **$39.95**

WIN!
Monthly!

Register with your E-Mail address to win MONTHLY drawings for equipment valued up to $300 and more! Each month we award a value package to one lucky person!

Next month...
IT COULD BE YOU!



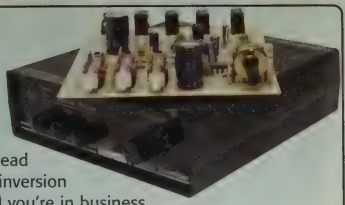
www.ramseykits.com/win

Speech Scrambler & Descrambler

KIT — Wired & Tested

- ✔ Full duplex operation allows scrambling and descrambling at the same time
- ✔ Bypass mode provides quick change from direct audio to descramble

Decode That Garbled Gibberish!



Communicate in total privacy over your radio! This is the popular SS70A descrambler/scrambler that you've read about in all the Scanner and Electronic magazines. The technology used within the unit is known as speech inversion which is compatible with many police department systems; hook it up to your scanner speaker terminals and you're in business. (However, always be sure to check with your local authorities to ensure that you're not straying into any unlawful communications reception.)

The SS70A is full duplex in operation - you can scramble and unscramble at the same time. Easily configured for any use! Easy to build since all complex circuitry is contained in a custom ASIC chip which provides clear, clean audio. Powered by 9 to 15VDC, with 3.5mm mini phone type input/output jacks. The included case measures 5"W x 1½"H x 5¼"D.

SS70C	**Speech Scrambler/Descrambler Kit With Case**	**$39.95**
SS70AWT	**Factory Assembled & Tested SS70C With Case And Power Supply**	**$69.95**
AC125	**110VAC Power Adapter**	**$9.95**

Model Rocket Tracking and Telemetry Transmitter

Super Stable Crystal Controlled!

KIT — Wired & Tested

- ✔ Easily track your rocket using a scanner receiver!
- ✔ Crystal controlled - no frequency drift!
- ✔ FM transmission!
- ✔ Subminiature SMT construction to fit any application!

The sky's the limit for this super stable, drift free transmitter! Most low cost transmitters are tunable and subject to frequency drift when subjected to temperature variations and vibration, etc. The MR6 frequency is set by a crystal to a frequency in the 2 meter Ham band of 146.535 MHz, easily picked up on any scanner radio or 2 meter rig. Changing the crystal allows you to change frequency anywhere in the 140 to 160 MHz range, and crystals cost only five or six dollars.

The telemetry/data input on the MR6 will accept any audio frequency telemetry source from your application's sensors. Transmission range is approximately ¼ mile line of site. The MR6 uses the latest in SMT surface mount technology and parts, so if you want to learn more about SMT, this is the kit for you! Don't be afraid of losing those small parts; we even include a few extras just in case you sneeze and lose a part! Power is supplied by a 3 volt Lithium camera battery or a pair of watch batteries which are included.

MR6	**Model Rocket Tracking Transmitter Kit**	**$44.95**
MR6WT	**Factory Assembled & Tested MR6**	**$79.95**

TERMS AND CONDITIONS, AKA: THE FINE PRINT!

All of this is printed on saddlestitched envelope/order form, but just in case someone boosted it from this catalog, here it is...again!

Payment – Check, money order, and credit card (MC, VISA, American Express, Discover) are all accepted. If paying by credit card, please include the full card number and the expiration date. If you are paying by credit card, you must provide the billing address exactly as it appears on your credit card statement.

Sales Tax – NY and VA residents must add appropriate sales tax unless a signed resale certificate accompanies your order.

Prices – Prices shown are those in effect at the time of publication. We work to hold prices firm, however prices are subject to change without notice. Current prices will prevail at the time an order is placed. Visit **www.ramseykits.com** for any last minute updates!

Shipping –

Continental U.S. customers – We normally ship via Parcel post or UPS depending on the size and value of the order. If we are shipping via UPS you must provide a physical address, as UPS will not deliver to P.O. Boxes. Add $7.95 for shipping, handling, and insurance on all orders. Express and air shipments are extra and priced at cost. COD is an additional $10.00.

Alaska, Hawaii, and Puerto Rico – Specify USPS First class, UPS 2nd day, or UPS overnight only. The amount will be added to your order.

Canadian customers – Make checks payable in U.S. funds or use a credit card. Add 20% to the cost of your order for shipping to a maximum of $50.00 for parcel post shipment. If you request UPS for delivery, we will confirm the amount to you prior to shipment. **These charges do NOT include any international duty charges.** Be aware, UPS shipments may be delayed in customs.

Overseas customers – We will determine the best method and cost for your location, and will confirm to you before shipment.

Returns – Examine (do not build) any kit for up to 10 days. If not completely satisfied, return in the original packaging for a full refund. Kits that are partially built cannot be returned. Wired and tested items can also be returned if in their original packaging, suitable for resale, within 10 days. Returns received after 10 days will be subject to a restocking fee.

Design Changes – From time to time we make design changes. Some items may differ slightly from photographs and descriptions in the catalog. You can be sure that such changes are made in the interest of better performance or appearance. In addition, with the fluctuating pricing changes of some electronic components, pricing is subject to change.

Manual Preview – Looking at a kit and want to review it more closely? Our manual preview policy lets you purchase most of our manuals for $5.00 (a few are more). Purchase price of the manual will be credited against your future associated kit purchase. You can also download most manuals (excluding the schematic!) at no charge from our website at **www.ramseykits.com**.

Get On The Air... For Under $40!

KIT QRP Mini-Receivers

- ✔ Sensitivity of approximately one microvolt rivals the big rigs!
- ✔ Covers 500 KHz of selected band
- ✔ Receives CW, SSB and AM
- ✔ Plenty of audio output, drives any speaker or phones
- ✔ Available in 20 meter, 30 meter, or 40 meter versions

These little rigs are burning up the airwaves as young and old alike are rediscovering the fun in building their own equipment! Our detailed, step-by-step instruction manuals make building an enjoyable and rewarding experience. You're guided carefully to the completion of a unit that not only works, but will provide hours of operating pleasure. These trusted and proven Ramsey all-mode mini rigs are routinely used worldwide by Hams of all ages.

You'll find you don't need high power - K71RK worked and QSL'd all states, plus global DX QSOs from Argentina to the former USSR—with only 2 mW! You don't need hundreds of watts, thousands of dollars or massive equipment; you'll find it's more fun with less!

These little receivers are based upon the SA-602 that we read about in Ham magazines and handbooks. Available in 20 meter, 30 meter, and 40 meter versions, the receivers are true superheterodyne direct conversion - a simple design that does not require the use of fancy IFs, RF filters, or exotic mixers; in short, the ideal design for easy hobby building. Only recently have high performance ICs become available that enable such circuitry to be constructed. Beginners can easily build these receivers. And, experienced amateurs and QRP enthusiasts can use them as a reliable, economical, basic foundation for modifications.

Our single PC board has plenty of room for lots of modifications and hook-ups - tinker to your heart's delight. Suggestions and technical info are included in every receiver manual. Isn't this what Ham radio is all about? Operates on 9 V battery (not included). Included case measures 5"W x 1½"H x 5¼"D".

HR20C	**20 Meter Receiver Kit With Case**	**$39.95**
HR30C	**30 Meter Receiver Kit With Case**	**$39.95**
HR40C	**40 Meter Receiver Kit With Case**	**$39.95**

QRP Mini-Transmitters KIT

- ✔ Four transistor circuit, oscillator, RF amplifier chain, and clean keying stage
- ✔ RF output of approximately one watt (3/4 W for QRP20)
- ✔ Pi-network output for good matching and harmonic suppression
- ✔ Provision for two internal crystals (one crystal provided), front panel switching
- ✔ VCXO tuning, frequency can be tuned approximately 7 KHz around XTAL frequency
- ✔ Available in 20 meter, 30 meter, or 40 meter versions

Work The World On A Watt!

These nifty little CW transmitters are practical and economical take-along rigs for trips, camping, teaching or just amazing yourself with what a watt will do! With an exceptional manual of over 20 pages, the detailed step-by-step instructions guide you to a perfectly operating finished transmitter. They are available in 20 meter, 30 meter, and 40 meter models.

The rigs use a standard crystal that is connected into a VCXO circuit - which means that you can tune around the crystal's frequency by up to 20 KHz - thus giving you stable crystal control while still being able to tune around! A front panel switch lets you choose between two crystals; we include one, you can add another of your choice. A built-in T-R switch allows break-in operation.

Of course, these transmitters interface perfectly with our QRP Mini-rig receivers and our CMOS CW keyer! And for the real Ham, there's plenty of room inside the included case for your own circuit modifications and experiments. These little rigs are often the heart of many QRP operator's stations. Modify "till-the-cows-come-home," or just them as they are - these little rigs pack a lot of performance into an economical package. Runs on 12 VDC at 200 mA. Included case measures 5"W x 1½"H x 5¼"D".

QRP20C	**20 Meter Transmitter Kit, Includes 14.060 MHz Xtal And Case**	**$39.95**
QRP30C	**30 Meter Transmitter Kit, Includes 10.108 MHz Xtal And Case**	**$39.95**
QRP40C	**40 Meter Transmitter Kit, Includes 7.040 MHz Xtal And Case**	**$39.95**
AC125	**110VAC Power Adapter**	**$9.95**

America's #1 Source For Exciting, Educational & FUN Kits!

ramsey electronics inc.
590 Fishers Station Drive
Victor, NY 14564 USA

- Build It!
- Learn It!
- Achieve It!
- Enjoy It!

It's Easy To Order!

Payment – Check, money order, and credit card (MC, VISA, American Express, Discover) are all accepted. If paying by credit card, please include the full card number and the expiration date. If you are paying by credit card, you must provide the billing address exactly as it appears on your credit card statement.

Sales Tax – NY and VA residents must add appropriate sales tax unless a signed resale certificate accompanies your order.

Prices – Prices shown are those in effect at the time of publication. We work to hold prices firm, however prices are subject to change without notice. Current prices will prevail at the time an order is placed. Visit **www.ramseykits.com** for any last minute updates!

Shipping –

Continental U.S. customers – We normally ship via Parcel post or UPS depending on the size and value of the order. If we are shipping via UPS you must provide a physical address, as UPS will not deliver to P.O. Boxes. Add $7.95 for shipping, handling, and insurance on all orders. Express and air shipments are extra and priced at cost. COD is an additional $10.00.

Alaska, Hawaii, and Puerto Rico – Specify USPS First class, UPS 2nd day, or UPS overnight only. The amount will be added to your order.

Canadian customers – Make checks payable in U.S. funds or use a credit card. Add 20% to the cost of your order for shipping to a maximum of $50.00 for parcel post shipment. If you request UPS for delivery, we will confirm the amount to you prior to shipment. **These charges do NOT include any international duty charges.** Be aware, UPS shipments may be delayed in customs.

Overseas customers – We will determine the best method and cost for your location, and will confirm to you before shipment.

Returns – Examine (do not build) any kit for up to 10 days. If not completely satisfied, return in the original packaging for a full refund. Kits that are partially built cannot be returned. Wired and tested items can also be returned if in their original packaging, suitable for resale within 10 days. Returns received after 10 days will be subject to a restocking fee.

Design Changes – From time to time we make design changes. Some items may differ slightly from photographs and descriptions in the catalog. You can be sure that such changes are made in the interest of better performance or appearance. In addition, with the fluctuating pricing changes of some electronic components, pricing is subject to change.

Manual Preview – Looking at a kit and want to review it more closely? Our manual preview policy lets you purchase most of our manuals for $5.00 (a few are more). Purchase price of the manual will be credited against your future associated kit purchase. You can also download most manuals (excluding the schematic!) at no charge from our website at **www.ramseykits.com**.

Kits Are FUN!

1-800-446-2295

AM-FM BROADCASTERS, CAMERAS, TRANSMITTERS HOBBY KITS, AMATEUR RADIO, TOOLS...AND MORE

ramseykits.com

ramsey

CALL TOLL FREE 1-800-446-2295
ONLINE ORDERING www.ramseykits.com

RAMSEY ELECTRONICS, INC. 590 Fishers Station Drive • Victor, NY 14564 • (585) 924-4560 • (585) 924-4886 Fax

ORDER FORM

Note: Credit Card Order MUST have your phone number, and must be shipped to your credit card billing name and address!

NAME _____ KEY CODE _____

ADDRESS _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE ( ) - _____ E-MAIL _____

Qty	Model No.	Description	Price Ea.	Total

SUBTOTAL OF ITEMS ABOVE	(minimum of $10.00 except for manuals)	$	
Standard U.S. Shipping	Includes Shipping, Handling, and Insurance (Best way ground)	$	7.95
Premium U.S. Shipping	**ADD**: 3 Day Air: $6.00, 2nd Day Air: $10.00, Next Day Air: $24.00	+	
C.O.D.	**ADD** $10.00	+	
Saturday Delivery	**ADD** $15.00 (must select Next Day Air, above)	+	
International	**20%** of "Total Items" ($100.00 max ship charge, no C.O.D.)	+	
Canada	**20%** of "Total Items" ($50.00 max ship charge, no C.O.D.)	+	
NY & VA Sales Tax	**ADD** your rate if you reside in these states	+	
GRAND TOTAL	(including shipping)	$	

Payment: Check ❑ C.O.D. (USA Only) ❑ Credit Card ❑

Credit Card # _____

Expiration Date _____ Signature _____

Note: Credit Card Order MUST have your phone number, and must be shipped to your credit card billing name and address!

You Won't Believe The Special Deals And Really Neat Stuff At...

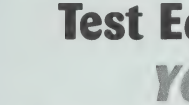
www.ramseykits.com

- ✔ Monthly Giveaways!
- ✔ Clearance Specials
- ✔ User Forums
- ✔ Kit Building Guides
- ✔ Downloads
- ✔ A Whole Lot More!

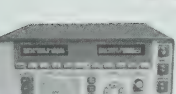
Visit Today!

RAMSEY Professional Test Equipment??

YOU BET!



COM3010 Service Monitor
Full Duplex, .1MHz - 1GHz!
Full Features, Low Cost!



RSG1000B Signal Generator
100KHz - 1100MHz, AM/FM
Excellent Value, Easy To Use!

And Much More!

800-446-2295

Name _____

Address _____

City/State/Zip _____

Place Stamp Here!

590 Fishers Station Drive
Victor, NY 14564-9744

QRP Linear Amplifiers

KIT

- ✔ Works great with Ramsey QRP rigs or any other 1-2 watt transmitter
- ✔ Built-in T/R relay automatically switches between receive and transmit
- ✔ Operates all modes; CW, SSB, or AM

Cut Through The QRM With 20 Watts!

Need a little extra boost for your QRP rig? This nifty little amplifier may be all you need. Believe it or not 20 watts is only 7db (about one S unit!) less power than a full sized commercial transceiver. These compact amplifiers are easily driven by any of our QRP transmitters or any other unit in the ½ - 2 watt range, and are available in 20 meter, 30 meter, and 40 meter versions.

Advanced power MOSFETs are used for the utmost in efficiency and purity, while a multistage low pass filter is used to assure a clean signal output. Power required is only 12 VDC at 2 to 4 amps, depending upon power output. Complete step-by-step instructions are provided which make building the kit a breeze. The amplifier works well for all modes: CW, SSB and AM. Included case measures 5"W x 1½"H x 5¼"D".

QAMP20C	**20 Meter QRP Amplifier Kit With Case**	**$49.95**
QAMP30C	**30 Meter QRP Amplifier Kit With Case**	**$49.95**
QAMP40C	**40 Meter QRP Amplifier Kit With Case**	**$49.95**

Low Bander Low Frequency SWL Converter

Tune In The Exotic Low Freq RF Band!

- ✔ Explore the world below 400KHz!
- ✔ Easy hook-up with built-in antenna switch
- ✔ Works with any short wave radio

Everyone has a high performance general coverage SW radio, but who needs a converter for LF? YOU do! You'll be amazed; there are a ton of exciting signals down there with hundreds of beacons from around the world along with time and frequency standards from various governments.

Wired & Tested KIT

There are lots of hobbyists running in the one watt license-free band and the FCC is even considering a Ham band with 200 watt power! Many newer SW receivers say they will receive down low, but check the specs - just because it tunes down to 100 KHz doesn't mean it can actually hear anything there! Most receiver front-ends optimized for HF don't work well at LF. We designed the lowbander to hear it all, a 7 pole low pass filter along with an overload resistant switching mixer squashes spurious birdies and annoying interference. Hook-up is a snap, with built-in antenna switching between regular and LF antennas. All signals are converted up to 4 MHz, so if you want to hear 136 KHz - just tune your rig to 4.136 MHz - it's that easy. We give you antenna hints as well as web links for info on the exciting world below 400 kHz! For a great finished looking converter, we include the custom matching case set. Runs on 12VDC.

VLF1C	**Low Frequency SWL Converter Kit With Case**	**$39.95**
VLF1WT	**Factory Assembled & Tested VLF1 With Case And Power Supply**	**$69.95**
AC125	**110VAC Power Adapter**	**$9.95**

Mini VHF Receivers

KIT

- ✔ Tunes any 5MHz portion of selected receiver band
- ✔ Excellent performance, less than 1µV sensitivity
- ✔ True Superhet Receiver with sharp ceramic IF filters
- ✔ Front panel volume, squelch, and tuning controls

Low Cost.. Easy To Build!

There are no short cuts taken in the design of these units-sensitivity is equal to full size monitor receivers or scanners. Schools, scout troops, clubs and hobbyists use these receivers for teaching, monitoring, and just plain building enjoyment. Any one of these little receivers is ideal for easy chair listening, and with no big clunky box and wiring to aggravate the XYL! All four receivers can be tuned outside of the intended amateur bands. For example, the FR146 two meter receiver will tune any 5 MHz segment from 130 to 180 MHz. Choose your band and enjoy FM repeater and simplex monitoring on a budget! Help a newcomer discover the 220 MHz novice band. Listen in on exciting 10 Meter international FM action. Rediscover the fascination of 6 Meter sporadic E band openings and uncrowded new FM repeaters. For a professional finished look, our matching case and knob set is included. Kit includes detailed step-by-step manual that carefully guides you to a finished working radio. Runs on a standard 9VDC Battery. Case measures 5"W x 1½"H x 5¼"D.

FR146C	**2 Meter Receiver Kit With Case**	**$44.95**
FR6C	**6 Meter Receiver Kit With Case**	**$44.95**
FR10C	**10 Meter Receiver Kit With Case**	**$44.95**
FR220C	**220 MHz Receiver Kit With Case**	**$44.95**

Wired & Tested KIT

Doppler Direction Finder

- ✔ Track down jammers and hidden transmitters with ease!
- ✔ Elegant and cost effective design thanks to WA2EBY!
- ✔ Featured in May/June 1999 QST Magazine
- ✔ Convenient LED 22.5 degree bearing indicator
- ✔ Adjustable damping rate, phase inversion, scan enable/disable
- ✔ Utilizes latest high speed CMOS technology for signal conditioning and audio processing!

Track Them Down Quick!

Get in on the fun of radio direction finding (RDF) with this super kit ! The latest in affordable Doppler direction finding equipment available in a complete kit form ..this one even includes the receiving antenna assembly! A must for the "fox hunter" at an unheard of price! Radio direction finding is a fascinating hobby and is becoming more and more popular in today's portable world.

With the increasing number of intentional jammers and other unknown transmitters around, Doppler DF locators have become the rage with a display that gives you a direct bearing on the location of the transmitter. Pretty neat trick considering you don't need multiple separate receivers at different locations to triangulate on the mystery transmitter! The kit includes the Doppler Direction Finder display unit and all the parts necessary to build your own four point, 5 piece magnetic antenna assembly for easy setup and use. Operates on 12VDC, and includes a matching 12VDC power plug for custom integration and connection into your vehicle or portable power supply. Easy to hook up to any FM receiver. Transmitter (the object of your DF'ing) need not be FM, it can be AM/FM or CW.

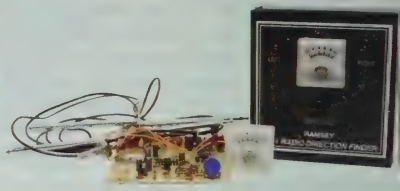
Requires only a connection to your receiver's speaker jack and radio's antenna. The whips can be cut and optimized for any frequency from 130-1000 MHz. An easy to build, reliable kit that compares most favorably to commercial units costing upwards of $1000.00! Comes complete with matching case, 12VDC plug, magnetic antenna kit with cables, and a comprehensive instruction manual. *(Sorry, the Dodge Stratus above isn't included, my daughter totaled it!)*

DDF1	**Doppler Direction Finder Kit, With Case, Power Cable, And Magnetic Antenna Kit**	**$169.95**
DDF1WT	**Factory Assembled & Tested DDF1 With Case, Power Cable, And Magnetic Antenna Kit**	**$269.95**

Foxhound Direction Finder KIT

- ✔ Pin diode switching of antennas, coupled with filters, determine direction of source signal as indicated by a pair of LEDs
- ✔ Sensitive metering allows easy "zeroing-in" on transmitter!
- ✔ Includes two telescoping whip antennas
- ✔ Features a built-in T/R switch!

Join The Fox Hunt Craze!



The Foxhound connects to any radio through the speaker jack and antenna connector and will allow you to easily zero in on the exact direction of an unknown transmitter, be it aircraft, two-way radio, Ham or even TV. The Foxhound uses a pair of telescopic whip antennas which are manually turned (by you!) until the sensitive meter indicates the lowest reading.

This direction finder uses the latest technology for trouble-free, solid operation. The antennas are alternately switched on and off using PIN diodes. The outputs are then passed thru a high-Q audio filter and synchronously detected for phase shift. A pair of LEDs tell you in which direction you should rotate the antennas- to the right or left.

We provide the telescopic whip antennas and ask you to provide a two foot long "boom" on which to mount them. And, as an added feature, we've included an automatic T-R switch! The T-R switch is ideal for handie-talkie usage; if you wish to transmit with your radio - go ahead, the Foxhound will sense your transmitter power and automatically switch itself out of the circuit while you talk.

Be the one with the answers, win those transmitter hunts, track down the jammers; you'll do it all with your Foxhound! Operates on internal 9 Volt battery or 12VDC, via a 2.1mm female power jack. Includes a custom case set for super-nice looking finished kit! *(No foxes were injured or harmed during DF1 development!)*

DF1C	**Foxhound Direction Finder Kit With Case**	**$74.95**
AC125	**110VAC Power Adapter**	**$9.95**

2-Meter Receiver Preamp

KIT

- ✔ 2 Meter Preamp with the sharpest filtering available!
- ✔ Can be powered up the signal coax (9 to 15 VDC)
- ✔ Helical filter for fantastic intermod rejection

Great Gain And Super Selectivity!

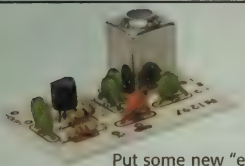
Here's the ideal preamp for repeaters, base stations, mobiles - anywhere a selective, low noise signal boost is needed. Unlike other preamps the PR100 features extensive RF filtering to crush intermod before it reaches your radio.

Two poles of sharp Helical filtering combined with a 3 pole L-C tank allow only signals of interest to reach your receiver. A low noise microwave bipolar transistor provides an excellent 1 dB noise figure while remaining ruggedly insensitive to static and strong signals. Preamp is easily configured to be powered via the coax (for mast mount applications) or powered through a separate power cable. Kit is designed to fit snugly into a 3" long piece of 1 ½" PVC pipe with end caps, making an ideal outdoor enclosure. Runs on 9 to 15 VDC. Size: 4"w x 7/8"h x 1 3/8"d.

PR100 **2 Meter Receiver Preamp Kit** **$34.95**

Low Cost Receiver Preamps

KIT



The Quick And Easy Preamplifier!

- ✔ Low noise (typically < 1 to 1.5 dB)
- ✔ High Q tuned circuits (very narrow band) prevent out-of-band signals from overloading front-end
- ✔ Available in 2 meter, 220 Mhz, 440 MHz

Put some new "ears" on your rig with one of these hot little preamp kits. Their high gain combined with low noise will improve most any receiver. Fully protected against overload and designed for low current and stable operation, they employ high Q tuned circuits which restrict out-of-band signals which can cause intermod blanking and overload of your radio's front-end.

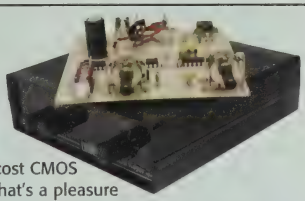
Don't be misled by GaAs FET claims! The cheap dual-gate FETs (manufactured for TV tuner usage!) used by others just don't come close to the performance of these preamps designed with NEC microwave transistor devices. Gain is typically 16 to 20 dB and noise figure is 1 dB @ 2 Meters, 1.2 dB @ 220 MHz, and 1.4 dB @ 440 MHz. Compact design for easy installation into most any rig. Operates on 12 to 15 VDC . Size: 1" x 3/8" x 1 ½".

PR10	**2 Meter Receiver Preamp Kit**	**$14.95**
PR20	**220 MHz Preamp Kit**	**$14.95**
PR40	**440 MHz Preamp Kit**	**$14.95**

EZ Key CW Keyer

- ✔ Perfect CW in one night!
- ✔ Ideal for code practice
- ✔ Great features-budget price

Works With Any Rig!



Add to your CW fun with our low cost CMOS Keyer Kit. You'll send clean code that's a pleasure to copy; self completing dots and dashes with properly weighted spacing and timing are all programmed into the CW7C's design. Assembly of the keyer is fast, easy, and fun. Our step-by-step instructions lead you to a finished unit in only one evening. Great for beginners to learn proper and perfectly formed CW right from the start!

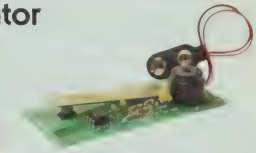
Built-in tone, adjustable pitch, and front panel speed and volume controls are featured. The CW7 is the ideal companion to our QRP transmitters or any other rig you may own. You need to supply an external set of paddles (Manual includes details on constructing economical paddles). The included custom case and knob set matches our QRP receivers and transmitters and gives your keyer a nice attractive finished look. Runs on a standard 9VDC battery. Case measures 5"W x 1½"H x 5¼"D.

CW7C **CW Keyer Kit With Case** KIT **$34.95**

Code Practice Oscillator

- ✔ Great starter kit for young or old!
- ✔ Ideal scouting project
- ✔ Practice your code anywhere!

Learn Code The Simple Way!



Looking for a great starter kit to spark the interest of a future engineer? Looking for an easy way to either learn or practice your code? This little code practice oscillator is inexpensive, easy to build and easy to use, and features an audio tone adjustment for your listening pleasure.

The unique "key" built on the board simulates a standard CW key making it unnecessary to connect an external key. A small built-in speaker provides you a clear audible tone complete with adjustable pitch. Uses the ever popular 555 timer IC with full theory of operation to guide you through the construction. Handy 9 VDC battery operation insures hours of enjoyment and the chance to practice your CW code anywhere you go. Size: 3 1/2" X 1 1/2" X 3/4".

CPO3 **Code Practice Osc. Kit** KIT **$14.95**

Sound Reversing Car

NEW!

- ✔ Forward on noise!
- ✔ Reverse at obstacle impact!
- ✔ Sound activated

Backs Away From Obstacles!

One of our most popular robotic cars! This sporty little yellow car advances forward when it hears sound. When it touches something it backs up and continues on! It knows to turn around!

Uses a built-in hi sensitivity microphone to detect noise (like a clap) to make it move forward. Runs on 2 AA batteries not included. Your kids, cat, and dog will be...amazed!

21881 Sound Reversing Car Kit KIT **$19.95**

Line Tracking Mouse

NEW!

- ✔ Follows a black line!
- ✔ Sound activated
- ✔ 2 sets of gear motors

Uses Photo Interrupters!

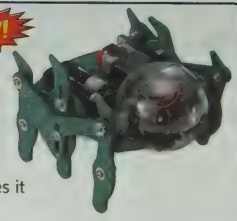
How magical! A smart robot mouse tracks a black line using a photo interrupter for its eyes!

A craze to watch! Create a twisting and turning Grand Prix style road layout yourself with black tape on a light background. Watch the cute little mouse track the line you made to find its target! The kids will love it! Includes 2 sets of gear motors. Runs on 4 AA batteries, not included.

21880 Line Tracking Mouse Kit KIT **$34.95**

Hexapod Monster

NEW!



- ✔ IR detector diode "eyes"!
- ✔ 2 sets of gear motors!
- ✔ Six crawling legs

IR Eyes Detect Obstacles!

Nothing like having your own Hexapod Monster in your house! Well, this one makes it exciting and educational as well.

Uses IR emitting diodes for its eyes and moves with his six huge legs. Moves straight until its eyes detect an obstacle and then turns left and continues to move straight until the next obstacle. 2 separate sets of gear motors are included with the kit along with the IR detectors. Mechanics use 2 AA batteries and the electronics use a standard 9VDC battery. Batteries not included. Add a Hexapod to your house today!

21883 Hexapod Monster Kit KIT **$24.95**

Auto Turning Frog

NEW!

- ✔ 2 sets of gear motors!
- ✔ Changes & repeats paths by sound!
- ✔ Sound activated

A Frog With An Attitude!

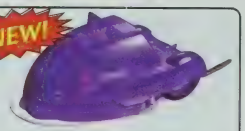
This little robotic frog is incredible! When it detects sound it will move and then repeat the following steps sequentially: Start (move forward),k stop, left turn, stop, right turn, stop! Makes you wonder what it's really thinking! Probably the same thing as a real frog!

Uses a built-in hi sensitivity microphone to detect start audio. Has 2 sets of gear motors that require 2 AA batteries not included. The electronic circuit requires a standard 9VDC battery, also not included. Have hours of fun with "Froggie"!

21882 Auto Turning Frog Kit KIT **$22.95**

Weasel Robot

NEW!



- ✔ Touch and light weasel sensors!
- ✔ 3 speed gear box!
- ✔ PC board assembled or kit

There Goes The Weasel!

The Weasel has two sensors that allow it to "see" and "feel" its way along walls and around corners. Just like real weasels, if there's a way to get there, this one will!

Its dual DC motors and contact sensor activate the wall-sensing micro switch to control the motors' on/off functions that determine the path of the wall. Using the classic robot "left hand rule" the weasel easily escapes mazes. Besides the wall sensors the weasel also features photo-transistors that enable it to detect and follow a black line! Want more? How about a three speed gear box to give this weasel variable speed that you determine! The weasel is a great beginner's robot that makes a great entry for workshops, fairs, and competitions due to its multiple sensors and functions. Both electronics and mechanics are powered by 4 standard AA batteries, not included. Available as mechanical assembly only with a pre-assembled PC board, or a kit version of the PC board to teach you soldering techniques. From Owikit. KIT

OWI9910 Weasel Robot Kit, PC Assembled $24.95
OWI991K Weasel Robot Kit, Kit PC Board $24.95

Sumo Robot

NEW!

- ✔ Infrared sensor!
- ✔ Tractor style wheels!
- ✔ Climbs over everything

Check Out Them Treads!

Yes! The Sumo tradition comes to robotics and to your home! The super warrior "Sumo Robot" can be controlled to assail and overpower its opponent or retreat to prepare for battle.

An infrared beam is emitted when detecting an opponent. When detected it instructs the brain of the Sumo to "charge" therefore creating a realistic wrestling match! The 4-wheel halftrack suspension is powered by a single DC motor. Quick and easy mechanical assembly. Includes comprehensive instructions and theory to make the Sumo a fun learning experience. Both electronics and mechanics are powered by 4 standard AA batteries, not included. From Owikit.

OWI9647 Sumo Robot Kit KIT **$59.95**

robotics

Pronunciation: rO-'bä-tiks

Technology dealing with the design, construction, and operation of robots in automation. *(From the "need to know" department!)*

Hydrazoid Alien Creature

- ✔ 4 long alien legs!
- ✔ Responds and reacts to sound!
- ✔ Built-in electret condenser mic

NEW!

The Sound Sensing Alien!

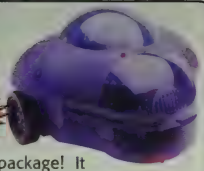
Just your average Hydrazoid with the normal wacked-out alien type of legs! Its long and alien type legs make it walk in a way that's spellbinding to watch! Kids love it!

Like a few of the other robotic kits, the Hydrazoid uses a built-in hi sensitivity microphone to detect sound. Utilizes one common DC motor for leg motion. Mechanicals and electronics require 2 standard AA batteries, not included. Mechanical assembly only, no soldering required. Measures 2¾" x 1¾" x 2 5/32". From iBotz.

MR1004 Hydrazoid Alien Kit KIT **$36.95**

TriBotz Robotic Car

- ✔ Infrared, sound, and touch sensors!
- ✔ 2 wheels driven by 2 motors!
- ✔ Three robotics in one package!



Senses Everything! NEW!

TriBotz is like getting three robots in one single package! It uses sensors to avoid objects, sensors to follow a line, and sensors to respond to sound!

Includes a high sensitivity electret condenser mic, infrared proximity sensor, and light detectors for all three modes. Extensive documentation covers the how's and why's of all the circuits and technologies used, as well as the construction Requires 2 standard AA batteries, not included. Mechanical assembly only, no soldering required. Measures 3 15/16" x 5 7/8" x 5½". From iBotz.

MR1005 TriBotz Robotic Car Kit KIT **$54.95**

Moon Walker II

NEW!

- ✔ Light and sound sensors!
- ✔ Built-in timer!
- ✔ PC board assembled or kit

Build The Board...Or Don't!

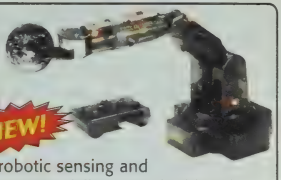
This "Moon Walker II" robotic kit begins to walk when it detects either a sound command or a light command. It then continues its four legged walk until instructed by a built-in internal timer to stop walking!

Uses a photo transistor to sense light and a built-in electret condenser mic to sense audio to start. Detailed assembly and theory manuals guide you through the basics of robotics, and if you selected the kit version, the assembly of the PC board. Mechanicals and electronics require one standard AA battery, not included. Available as mechanical assembly only with a pre-assembled PC board, or a kit version of the PC board to teach you soldering techniques. From Owikit.

MV979 Moon Walker Kit, Assem PC KIT **$39.95**
OWI979K Moon Walker Kit, Kit PC board $39.95

Robotic Arm Trainer

- ✔ Learn all the motions!
- ✔ 5-switch wired control!
- ✔ Fun way to learn robotic control



Have Fun Learning! NEW!

This Robotic Arm Trainer teaches basic robotic sensing and locomotion principles while testing your motor skills as you build and control the arm! You can command the unit with its 5 switch wired controllers (with lights) to grab, release, lift, lower, rotate wrist, and pivot sideways 350°.

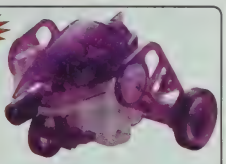
After assembly you can observe the dynamics of gear action through the transparent arm. Five motors and five joints allow for flexibility and fun! Great for educators, students, and home schoolers. Includes detailed documentation on robot control technology to help you learn the exciting world of robotic control. Mechanical assembly required. Runs on 4 standard D batteries, not included. From Owikit.

OWI007 Robotic Arm Trainer Kit KIT **$84.95**

Rockit Robot

NEW!

- ✔ Sound and touch sensors!
- ✔ Built-in electret condenser mic!
- ✔ PC board assembled or kit



Has A Mind Of Its Own!

The Rockit Robot is the ultimate robotic learning kit that's also a ton of fun to work with! Watch it evolve into a robot as you build it!

When it hears a sound or comes in contact with something it reverses and then turns left to embark on a new course of its own! Mechanicals and electronics require one standard AA battery, not included. Available as mechanical assembly only with a pre-assembled PC board, or a kit version of the PC board to teach you soldering techniques. From Owikit.

OWI7769 Rockit Robot Kit, PC Assem KIT **$24.95**
OWI769K Rockit Robot Kit, Kit PC Board $24.95

Jungle Robot

NEW!

- ✔ Climbs or walks on command!
- ✔ Sound activated!
- ✔ Ape-like animation

It's An Ape, No...It's A Robot!

You'll think you're watching an ape movie on TV! This "cute" little guy traverses hand over hand like an orangutan or walks on the ground like a gorilla!

Sound activated, he turns on and starts walking or climbing at your audible command and continues to walk for a pre-determined amount of time, then resets waiting for your next command. One of the neatest new designs with those big long "arms" that work in either mode. Kids can't help but love him!

Includes detailed mechanical assembly instructions as well as circuit theory. Requires a standard AA battery, not included. From Owikit.

OWI9870 Jungle Robot Kit KIT **$19.95**

Spider III Robot

NEW!

- ✔ Infrared beam control!
- ✔ Avoids obstacles in its path!
- ✔ PC board assembled or kit

Walks Like The Real Thing!

More people than Gil Grissom will think this guy is really neat when they see him crawl around your house!

With its radical walking style this intelligent robot avoids interference by emitting an infrared beam which detects obstacles in its path. Then the infrared control takes over and sends a series of pulses out and back to alter the Spider's direction. Electronics require a standard 9VDC battery and mechanicals require 2 standard AA batteries, not included. Available as mechanical assembly only with a pre-assembled PC board, or a kit version of the PC board to teach you soldering techniques. From Owikit.

OWI9727 Spider III Kit, PC Assem KIT **$59.95**
OWI972K Spider III Kit, Kit PC Board **$49.95**

Hyper Line Tracker

NEW!

- ✔ Sonic tracking system!
- ✔ Memorizes your black line course!
- ✔ PC board assembled or kit

Remembers Its Own Path!

This cyber bug possesses a sonic tracking system and is fortified with a multitude of sensors!

Photo sensors detect a black line for its path and then memorize the path for its next trek. In addition, two red LEDs tell you which side of the light sensor is activated! The Hyper Line follows a designated course and by using an infrared emitter, light sensor circuitry, and tracking memory it demonstrates how robots "see" a pathway. What a thrill to make your own path with a black felt-tip marker or black tape and watch the robot make course corrections. Both electronics and mechanicals require 4 standard AA batteries, not included. Available as mechanical assembly only with a pre-assembled PC board, or a kit version of the PC board to teach you soldering techniques. From Owikit.

OWI9737 HyperLine Tracker, PC Asm KIT **$59.95**
OWI973K HyperLine Tracker, Kit PC Board **$59.95**

4 In 1 Robot

NEW!

- ✔ 4 modes of movement!
- ✔ Sound activated!
- ✔ Simply neat to watch!

It Moves Regardless!

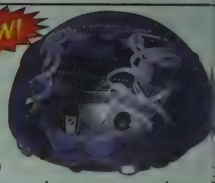
This nifty 4 in 1 robot kit features four different methods of movement. No matter how it has to get where it's going, it will get there!

It has: Traversing mode, hand over hand like an orangutan, 2 legged walking mode like a gorilla, 4 legged walking like a centaur, and six legged walking like a spider. Built-in electret condenser mic activates motion. Learn robotic sensing and different means of locomotion with this neat 4 in 1 robotic kit. Both electronics and mechanics are powered by 1 standard AA battery, not included. From Owikit.

OWI9874 4 in 1 Robot Kit KIT **$44.95**

WAO Kranius Robot

NEW!



- ✔ Limited edition 4th generation!
- ✔ 8-bit microcontroller & keyboard!
- ✔ Stores up to 60 steps plus loops

Programmable Without A PC!

The WAO Kranius is the 4th generation of WAO programmable robot kits. The 2-wheeled robot can be programmed to follow an interesting path without the use of an external PC!

The brain of the robot is an 8-bit microcontroller and a built-in keyboard with 33 tactile buttons. The micro stores up to 60 programming steps and 30 "for-next" multiplex loops. The robot features six vision sensors including 2 infrared light sensors to detect obstructions and 4 floor light sensors to detect a contrast of light (like the edge of a table) to allow for complex programmming.

Makes you plan ahead, think systematically and logically, develop problem-solving skills, and challenges you to think creatively. A comprehensive assembly and programming manual is included help you learn as you build. Both electronics and mechanics are powered by 2 standard AA batteries, not included. From Owikit.

OWI9762 WAO Kranius Robot Kit KIT **$119.95**

Comet Robot

NEW!

- ✔ Sound sensor!
- ✔ Two wheel drive mechanism!
- ✔ Random actions

Hears Sounds And Responds!

The Comet is quick to respond and scurries speedily away on command! The built-in condenser microphone hears your command and the Comet randomly reacts with three radical features including sequential commands, random control, and drawing capabilities.

For each sound the Comet's drive wheels will begin a new action, including forward, spin clockwise, and stop. Put a marker pen in Comet's holder and command it to draw! Both electronics and mechanics are powered by 2 standard AA batteries, not included. From Owikit.

OWI9742 Comet Robot Kit KIT **$53.95**

Soccer Pro Robot

NEW!

- ✔ 6 ball kicking mechanisms!
- ✔ 2 DC motors!
- ✔ Wired remote control

Best Soccer Player Around!

There will be many hours of soccer playing and lots of goals scored with the Soccer Pro Robot! It features six operational kicking mechanisms and includes a wired control box and ball.

With its dual DC motors it runs forward, backward, turns left or right, and executes 360° turns. True soccer action helps you develop your hand/eye coordination skills. Mechanical assembly only is required and includes a detailed assembly manual. Both electronics and mechanics are powered by 4 standard AA batteries, not included. From Owikit.

OWI9850 Soccer Pro Robot Kit KIT **$44.95**

Solar Powered Car

NEW!

- ✔ Aerodynamic design
- ✔ Built-in solar panel
- ✔ Learn solar principles while playing

Triple Action!

Sleek, powerful, unearthly, and of course, very cool! This futuristic solar car is an exciting way to demonstrate the use of alternative energy. It features an aerodynamic transparent sports car shell housing that can be painted any color you wish, a 4 wheel chassis, and a powerful 1.4VDC 350mA solar cell.

The steerable front axel, rear wheel, and adjustable (directional/angle) solar panel mount are all independent parts, allowing for separate solar projects. The Triple Action Car also provides two way power: battery or solar source and is an aerodynamic racer with a multi-speed transmission. Runs on one standard AA battery as battery powered. Easy mechanical construction. From Owikit.

OWI685 Solar Powered Car Kit KIT **$39.95**

Amphibious Solar Vehicle

NEW!

- ✔ Built-in solar panel!
- ✔ Runs on land or sea!
- ✔ Learn solar power the fun way

Learn How Well Solar Works!

Light or no light, flat surface or water, it doesn't matter with the solar powered Amphibious Vehicle! Built-in solar panel (1.4VDC at 350mA) will run the vehicle outdoors in the sun or indoors with a suitable light source. But watch it die when the sun goes down or the light goes out! The perfect demonstration of the good and bad aspects of solar power!

Learn exactly what solar panels are made of and how they work. Learn their limitations while you're powering this neat vehicle that works on land or water! Can be used indoors or at night with a single AA battery, not included. Includes extensive documentation on solar cell theory and construction. Mechanical assembly required. Fun and safe to use in a pool! From Owikit.

OWI688 Amphibious Solar Vehicle Kit KIT **$39.95**

Turbo 2000 Car

NEW!

- ✔ Uses propulsion principles!
- ✔ Incredible power & torque!
- ✔ Optional solar power

A Real Speed Demon!

The Turbo 2000 is a slick (and fast) car that explores propulsion principles and includes several projects that teach the basics of electricity and solar energy if the optional solar panel is used.

You'll be amazed at the speed of this lightning fast racer. You'll be blown away by its serious air propeller and its direct drive DC motor for speed and its torque when downshifting! Make your speedster solar powered by adding the OWI608 solar panel kit that provides 1.4VDC at 350mA! For battery power it runs on 2 standard AA batteries. Includes learning information on propulsion techniques, solar techniques, and basic assembly procedures. From Owikit.

OWI6567 Turbo 2000 Car Kit KIT **$19.95**
OWI608 Solar Panel Battery Kit **$19.95**

Knight Invader Turbo Car

NEW!

- ✔ Built-in solar panel!
- ✔ 3 modes of propulsion
- ✔ Fast and fun!

Blow Them Off The Line!

The Knight Invader is a super race car that not only blows away its competitors at the starting line but also includes construction projects, teaches the principles of electricity, and demonstrates three different modes of propulsion.

It blows a fierce force of air to propel it off the starting line and challenges any competitor to keep up with it when it changes to direct DC motor drive! When on a "mission" the Knight Invader can change its transportation mode to solar power by adding the OWI608 solar panel kit giving it a secret mode of power. Includes detailed teaching instructions as well as assembly instructions. Requires 2 standard AA batteries, not included. From Owikit.

OWI6577 Knight Invader Car Kit KIT **$19.95**
OWI608 Solar Panel Battery Kit **$19.95**

Antoid Bug

NEW!

- ✔ Six legs!
- ✔ 2 independent DC motors!
- ✔ Infrared sensors detect proximity

Infrared Sensors!

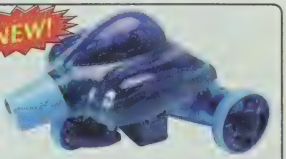
The Antoid is a "cute" little six legged creature that utilizes Infrared sensors to detect proximity.

Like all of our small robotic kits, detailed assembly instructions and theory of operation are included to help you understand exactly how and why the Antoid works and sees the objects it approaches! The dual motors require 2 standard AA batteries, while the electronic sensor section requires a standard 9VDC battery. Mechanical assembly only, no soldering required. Measures 6 1/8" x 7 1/16" x 6". From iBotz.

MR1002 Antoid Bug Kit KIT **$49.95**

Soundtracker Car

NEW!



- ✔ Detects and backs away from sounds and obstructions!
- ✔ Built-in electret condenser mic!

The Car That Backs Away!

The Soundtracker reacts to sound impulses and objects in its way. It will reverse away from a sound or obstruction, then move forward.

Uses a highly sensitive electret condenser microphone to detect audio and sounds to back away from. Three wheels are driven by a DC motor. Looks like a space-age car right from the movies. Entire "car" runs on 2 AA batteries, not included. Contains detailed theory, sensor techniques and complete assembly instructions. Mechanical assembly only, no soldering required. Measures 3¾" x 5½" x 5". From iBotz.

MR1001 Soundtracker Car Kit KIT **$26.95**

NEW!

KIT

Air Zinger Ball Blasting Robot Car

- ✔ Air technology!
- ✔ Inhales and blasts out a ball!
- ✔ Wired controller directs movement

What A Blast... Literally!

There's cool, then there's definitely cool...and the Air Zinger is right there! Built on air technology, this robot can inhale or blast out the included ball from its cannon-like loader snout! Now THAT's cool!

Zigging and zagging is no problem for the Air Zinger with its built-in wired remote controller. You can easily move it forward, back, left, and right. What's amazing is the whirlwind effect you create when you activate Air Zinger's wind magnum propeller!

When activated to retrieve the ball it's like watching a largemouth bass inhale its lunch! On your command the ball is launched again. Create your own games, tournaments and rules. Quick and easy mechanical assembly. Electronics require a standard 9VDC battery and mechanics require 3 standard AA batteries, not included. From Owikit.

OWI9003 Air Zinger Air Car Kit **$44.95**

Turbo 3000 Car

NEW!

- ✔ Air plus motor propulsion!
- ✔ Oversized tires and suspension!
- ✔ Optional solar power

Monster Racer!

The big brother to the Turbo 2000 features massively oversized tires and "tricked out" suspension that makes this car a real monster!

Features direct motor drive propulsion and air propulsion. The special air-blowing compartment allows the included ball to magically float into the air while the car is running. Includes electricity experiments involving both series and parallel circuits and a high powered light bulb. Make the Turbo 3000 solar powered by adding the OWI608 solar panel kit that provides 1.4VDC at 350mA! For battery power runs on standard AA batteries. Includes learning information on propulsion techniques, solar techniques, and basic assembly procedures. From Owikit.

OWI8606 Turbo 3000 Car Kit KIT **$12.95**
OWI608 Solar Panel Battery Kit **$19.95**

Roly Poly Robot

NEW!

- ✔ Two big wheels!
- ✔ Always rights itself!
- ✔ Pets love them

Always Gets Back On Its Feet!

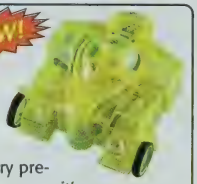
The Roly Poly Robot speeds across the floor on its two big cyclonic wheels the moment you turn it on. But that's only where the fun starts!

During its travel it will tumble, fumble, and stumble, however the engineering genius behind the Roly Poly gets it back on its feet whenever it tumbles to start a new path of exploration. Both kids and pets love following this little guy around watching him tumble into a new path! You can even personalize the domed wheels with your own drawings and patterns. Less than 20 parts plus the worm gear. The detailed assembly and theory manual covers gear structure, battery wiring, switches, motors, and the principles of Ohms law. Requires standard AA batteries, not included. From Owikit.

OWI9855 Roly Poly Robot Kit KIT **$19.95**

Binary Player Robot

NEW!



- ✔ You are the controller!
- ✔ Reads your optical disk directions!
- ✔ Infrared sensors

Follows Your Binary Directions!

This second generation Binary Player Robot is a very predictable two wheeled robot. And it's predictable because it's programmed with a binary disk created specifically by you!

Infrared sensors detect the black and white patterns on a disk that you create to guide the robot through its course. Different patterns activate either of two wheels to turn left, right, forward, or pause. These on/off commands illustrate the basic principles of binary coding. To change a movement program, you simply create a new disk pattern. Set your course and explore the facinating world of binary control with robotics! Require 2 standard AA batteries, while the electronic sensor section requires a standard 9VDC battery. Mechanical assembly only, no soldering required. From OwiKit.

OWI9875 Binary Player Robot Kit KIT **$34.95**

Robotic Rink

NEW!

- ✔ Self contained rink for all robots!
- ✔ Portable and easy to set up!
- ✔ Great for demonstrations

Carry The Rink To Your Show!

It's fun to watch your robots wander all over your house, but besides getting lost, that always doesn't demonstrate the technologies and abilities you built into them!

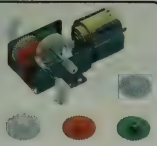
This self-contained arena is perfect for demonstrating your robot construction. Creates a bordered rink that is 44" in diameter and 3" high. Perfect for any robot action. Great for taking to school, demonstrations, shows, exhibitions, and science fairs.

Made of high intensity styrene plastic that collapses into a compact 8" diameter coil for easy transport and storage. From OwiKit.

OWIRINK Robotic Rink Kit KIT **$24.95**

Two-In-One Gearbox

NEW!



- ✔ 2 sets of gears!
- ✔ Includes shafts
- ✔ Set your speed

Set Your Own Speed!

We provide the motor, two sets of gears, metal shafts, gearbox, and other accessories in this gear kit. Use a different gear setting and you will have a different speed. See the tables below:

Gear Ratio 1:60, Reduction RPM 41:6

GEAR	TEETH	I.D.
Pinion Gear	10T	1.9mm
Face Gear	36T/14T	2.05mm
Double Spur Gear	36T/14T	3.05mm
Double Spur Gear	36T/14T	2.05mm
Spur Gear	36T/0T	2.9mm

Gear Ratio 1:288, Reduction RPM 41:6

GEAR	TEETH	I.D.
Pinion Gear	8T	1.9mm
Face Gear	36T/10T	2.05mm
Double Spur Gear	40T/10T	3.05mm
Double Spur Gear	40T/10T	2.05mm
Spur Gear	40T/0T	2.9mm

21130 2 In One Gearbox Kit KIT **$9.95**

Selectable Gearbox

NEW!

- ✔ Multiple mounting brackets!
- ✔ Three gear ratios selectable!
- ✔ Great Science Fair project

One Touch Selector!

This neat gear box can switch select three different gear ratios. If you need to drive pulleys, cars, wheels, or fans with either high torque or speed, look no further!

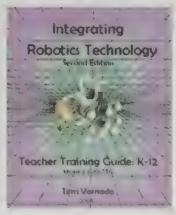
Adjustable mounting brackets allow for flexibility in project applications making it a breeze to fit your project.

With one touch you can select 6.8:1, 45.97:1, 310.74:1 or 17.68:1, 119.52:1, or 807.93:1 gear ratios. Motor voltage is 1.5-3.0VDC at .663A at 6,992 RPM. Measures 60mm x 25mm x 35mm. From Owikit.

OWIGB25 Selectable Gearbox Kit KIT **$14.95**

Robotics Teacher's Training Guide

NEW!



- ✔ Integrate Robotics into existing curriculum!
- ✔ Develop new Robotics programs in local schools & summer camps
- ✔ Enhance existing science and technology courses and programs
- ✔ Includes sample lesson plans

Teach Robotic Principles!

This guide will provide information necessary for educators to gain a working background knowledge to successfully and comfortably implement the integration of Robotics Technology into existing curriculum and content or new classes and programs.

Explore robot fundamentals including the history of robots, types of robots, and their practical applications. Become familiar with the basic electronics and mechanical aspects of beginning robotics that will add to your knowledge base and help you confidently deliver this information to your students.

Checkout and become familiar with the basic programming applications necessary to manipulate specific Owikits and other manufacturer's products. Great as a stepping stone to get Robotics into the classroom, lab, or summer camp and to move to other aspects of robotic technology. Use the sample lesson plans or develop your own to fit the needs of your program. From Owikit.

OWITTG Robotics Teacher's Training Guide **$74.95**

Robotics Elementary Course

- ✔ Tailored for the beginner!
- ✔ Covers robotics and electrical concepts!
- ✔ Great starter course

NEW!

Learn The Basics Of Robotics!

This robotics and basic electricity course was designed and written specifically for a beginner's experience level.

This teacher friendly course covers basic robotic concepts as well as basic electricity concepts and applications.

Basic robotic functions technologies are discussed in a way that captivates the student's mind and attention. Besides basic concepts, actual activities and research assignments are included in the course. The easy to read book is over 30 pages. From Owikit.

OWIELEM2 Beginner's Robotics Course **$19.95**

Robotics TeachKit Course

- ✔ The complete resource!
- ✔ Covers basic and advanced robotics!
- ✔ Comprehensive course over 110 pages

Robotics Written By Teachers!

NEW!

The perfect teacher resource for student experimentation with OwiKit and other robotic kits.

Captures the student's interest by covering all aspects of robotics used in the educational series of robots including the various modes of propulsion, different sensor technologies, motion technologies, thought processes, and more.

The resource is over 110 pages and features a complete teacher's guide with answer keys, appendix, and illustrations. From Owikit.

MVRETC Robotics TeachKit Course **$74.95**

Cola Clock

KIT

It's The Real...Time

- ✔ Uses Cola soda drink as the power source!
- ✔ Powers a real digital clock!
- ✔ Doesn't rot your teeth!

I know, you saw the header line "Cola Clock" and wondered to yourself... exactly what are they up to now? What could they possibly mean by a "Cola Clock"??

Well, that pretty much says it! We have always been into really neat things and this one is no exception! First off, you have a neat digital clock and a very unique stand that resembles a cola can. And why would that be? This educational kit actually uses your favorite Cola soda drink as the power source! The bottom compartment is the "Cola battery section"; all you need to do is pour a small amount of soda into the compartment and it creates a chemical reaction just like a battery does! Wala...the digital clock comes on and runs!

The full color manual shows you how batteries work with a chemical reaction similar to your Cola Clock. All parts are easily identified and the clock is easy to assemble. Learn about batteries and have a lot of fun doing it. Plus, your family, friends, and teachers won't believe their eyes, plus you have a real time clock to see when it's time to go to the dentist! *(Now we can add this application to the old one about cleaning rust from chrome bumpers!)*

FUN285 Cola Clock Kit **$19.95**

Electric Circuits

- ✔ Beginner's learning kit!
- ✔ 80 experiments
- ✔ From electricity to magnetics

Learn Electric Circuits

NEW!

The perfect beginner's course for electricity and electronics.

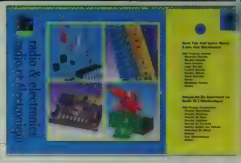
Includes 80 electric experiments such as electromagnetics, electrostatics, electric motors, electric meters, electrodes, series and parallel circuits, electromagnetic compass, magnetism, making batteries, and static electricity. No soldering required.

Requires 4 standard AA batteries, not included. From Power Tech.

EDU8100 Electric Circuits Kit KIT **$29.95**

Radio & Electronics

- ✔ Advanced electronics circuits!
- ✔ Over 200 different circuits included
- ✔ Includes transistors and ICs!



Work With Over 200 Circuits!

Go beyond the basics and explore a multitude of circuits and applications with this advanced Radio Electronics learning kit.

NEW!

More than 200 different circuits are included with a variety of components including transistors, integrated circuits, photo cells, speakers, resistors, and capacitors. The comprehensive manual includes circuits and theory for such circuits as a radio, music, logic alarm, games, industrial controls, and more. No soldering necessary. From Power Tech.

EDU8705 Radio & Electronics Kit KIT **$39.95**

CD ElectroLab

- ✔ Computer graphics lessons!
- ✔ "CAD" circuit design!
- ✔ Includes console & parts

NEW!

Design With Your PC!

Wow, who would have thought that a basic learning lab kit would include "CAD" circuit design? This not only provides the convenience of computer aided design but makes it easy to understand circuit theory.

The unique interactive CD program lets you create an endless number of functional electric circuits right on your computer. Once the design is complete you build them on the console with the supplied parts! Includes a voltmeter, ammeter, lamps, buzzers, diodes, resistors, and fuses.

Comprehensive learning manual covers the design and construction of all circuits. Requires Win95 or newer with a minumum screen resolution of 600x800. No soldering required. From Power Tech.

EDU8150 CD ElectroLab Kit KIT **$34.95**

Energy Lab

NEW!

- ✔ Learn all about energy sources!
- ✔ Build your own power plants!
- ✔ Over 200 activities

Learn The Creation Of Energy!

With this learning kit you will learn and experiment with the common modes of energy creation!

Over 200 energy related activities are included with this lab such as making a windmill, the steam wheel, the electric motor, the on/off switch, how to light a light bulb, making your own battery, solar powered motors, lightning, the propeller, and more.

You will even illuminate an LED with electricity you produce! The detailed learning and assembly manual guides you through each energy experiment and its related test procedures.

Experiments are safe and no soldering is required. From Power Tech.

EDU8950 Energy Learning Lab Kit KIT **$34.95**

Solar Lab

NEW!

- ✔ Learn & harness solar power!
- ✔ Watch it work in front of your eyes
- ✔ Over 150 activities included

Harness The Power Of The Sun!

This kit continues the educational and learning aspects of technology with the introduction of Solar Power!

Learn how to harness and conserve energy from the sun and auxiliary light sources. Activities include a solar furnace, stroboscope, moire patterns, electronic thermometer, photosynthesis, solar energy mobiles, producing electricity components, DC electric motor, solar cells, galvanometer, solar water heater and more! From Power Tech.

EDU8405 Solar Learning Lab Kit KIT **$29.95**

Physics Lab

NEW!

- ✔ Have fun with physics!
- ✔ Understand nature's basic laws!
- ✔ Includes over 250 activities

Yes, Physics Can Be Fun!

The Physics learning lab takes you into nature's basic laws in a fun and exciting way certain to spark curiosity!

Like all Power Tech labs, the comprehensive guide takes you through more than 250 physics activities. These include air and gasses, pumps, siphons, Bernoulli's principle, specific gravity, water pressure, forces and motion, simple machines, sound waves, light and shadows, heat transfer magnetism, electric motors, and a lot more. From Power Tech.

EDU8200 Physics Learning Lab Kit KIT **$29.95**

Chemistry Lab

NEW!

- ✔ Makes it easy to understand!
- ✔ Safe for kids and adults!
- ✔ Over 120 experiments included

Learn Chemistry The Easy Way!

In my school days I found myself stumped with the periodic chart on the blackboard and couldn't get beyond that! We make is interesting and fun to explore chemistry.

Contains over 120 unique experiments involving chemistry. Learn about chromatography, acids, bases, salts, indicators, reversible reactions, atoms, molecules, ions, and more. This chemistry is safe and complies with EN71 part 74. *(Guess I needed this in school!)* From Power Tech.

EDU8300 Chemistry Lab Kit KIT **$29.95**

Super Chemistry Lab

- ✔ Kitchen chemistry fun!
- ✔ 100 fun activities!
- ✔ From electricity to magnetics

NEW!

Your Kitchen Is Your Lab!

What a great place for youngsters to learn the basics of chemistry... their kitchen! And mom and dad will enjoy the fun too!

Over 100 kitchen activities relating to chemistry to keep your imagination wandering with excitement! Includes such fun activities as balloon tricks, gas canoe, making a geyser, cleaning old coins, cola volcano, removing an egg's shell without touching it, making invisible ink, cheese, finding iron in cereal and many more! From Power Tech.

EDU8350 Super Chemistry Lab Kit KIT **$29.95**

Volcano Lab

NEW!

- ✔ Make your own Volcano!
- ✔ Includes light and sound effects!
- ✔ Many activities

Get In Touch With Nature!

Definitely smaller in magnitude than Pompeii but this fun lab will allow you to create your own volcano complete with light and sound effects!

Understand nature's most powerful and awesome display of force. Make an erupting volcano with impressive effects. Trace the development of volcanoes and produce different types of eruptions. Other activities include making a fire extinguisher, making a lava light, chocolate lava, and much more. *(Now I want some chocolate lava cake!)* From Power Tech.

EDUCM011 Volcano Lab Kit KIT **$24.95**

Ecology Lab

NEW!

- ✔ Explore todays concerns!
- ✔ Understand the how's and why's!
- ✔ Over 150 ecology experiments

Understand Our World!

From the greenhouse effect to holes in our ozone layer this lab will guide you through the issues facing our world, and what we can do to help.

With over 150 experiments, you learn how a thermometer is built, the greenhouse effect, ice crystals, calorie calculations, how plants make oxygen Co2 is heavier than air, the barometer, the weather in a casserole, spore prints from fungi, testing acid rain, bacteria in the air, biodegradable issues, smoke, and a lot more. From Power Tech.

EDU8650 Ecology Lab Kit KIT **$29.95**

From Volcanos To Cola Powered Digital Clocks...
These Labs Make Learning About The World Around Us FUN!

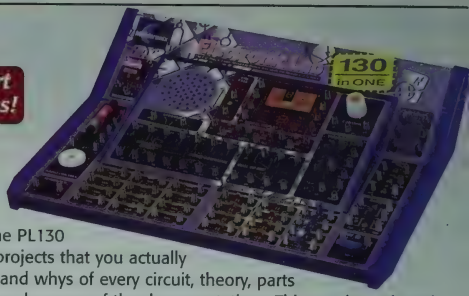
Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

Super-Fun 130 In 1 Electronic Lab

KIT

- ✔ No prior knowledge of electronics needed!
- ✔ Solderless connections for safe assembly
- ✔ Build 130 different circuits and see them work!
- ✔ Includes a comprehensive instruction & theory manual written for the youngest novice to understand!

A Great Start To Electronics!



For 30 years, Ramsey has provided educational hobby kits giving thousands and thousands of kids their start in electronics. We've searched and searched for an Electronics Lab specifically designed to teach the youngest experimenter the fun and excitement of electronics. The PL130 does just that! Learn the basics and theory of electronics the fun way, while building 130+ projects that you actually see working when you're done! The detailed 162 page instruction manual covers the hows and whys of every circuit, theory, parts identification, and description. We've looked at a lot of these kits and have turned them down because of the documentation. This one is a winner!

LOTS OF PROJECTS? YOU BET!

Electronic Woodpecker
The Chirping Bird
Electronic Cat
Sonic Fish Caller
Machine Gun Pulse Oscillator
Electronic Motorcycle
Two-Tone Patrol Car Siren
Electronic Siren
Electronic Metronome
Electronic Grandfather Clock
Light-Controlled Electronic Harp
Horror Movie Sound Effects
Strobe Light
Rapid LED Display Switching (Persistence Vision Test)
Capacitor Discharge/High Voltage Generator
Capacitors in Series and Parallel
Resistors in Series and Parallel
Light Dimmer
Transistor Switcher
Transistor Circuit Action
Sound Amplifier
Flip-Flop Multivibrator with LED Display
Seven-Segment LED Digital Display Circuit
Basic LED Display
Transistor Control Switching of the LED Display
Transistor, CDS Cell and LED Display Circuit
Diode-Transistor Logic AND with LED Display
DTL OR Circuit with LED Display
DTL NAND Circuit with LED Display
DTL Exclusive OR Circuit
Transistor NOR Circuit with LED Display
Transistor Flip-Flop Circuit
Transistor Toggle Flip-Flop
Transistor-Transistor Logic Buffer Gate
TTL Inverter Gate
TTL AND Gate
TTL OR Gate
TTL Exclusive OR Gate
TTL NOR Gate
TTL Three-Input AND Gate
TTL AND Enable Circuit
TTL OR Enable Circuit
TTL NAND Enable Circuit
TTL R-S Flip-Flop
Toggle Flip-Flop Circuit Made from NAND Gate
TTL Line Selector
TTL Data Selector
TTL Astable Multivibrator
TTL Tone Generator
Winking LEDs
A One-Shot TTL
Transistor Timer with TTL
Buzzin' LED
Son of Buzzin' LED
Set/Reset Buzzer 1
Set/Reset Buzzer 2
Sound Machine
Big Mouth
Shot in the Dark
Variable R-C Oscillator
Oscillator with Turn-Off Delay
Temperature-Sensitive Audio Oscillator
Two-Transistor, Directly Connected Oscillator
Push/Pull Square Wave Oscillator
Pencil Lead Organ
LED Strobe Light
Electronic Organ
Daylight Early Bird
Intermittent Alarm Generator
Comparator
Basic Increase in DC Voltage
Constant-Current Source
Integrating Circuit
Schmitt Trigger Circuit
Noninverting Two-Power Supply Amplifier
Inverting Two-Power Supply Amplifier
Noninverting Single-Power Supply Amplifier
Two-Power Supply Differential Amplifier
Tone Mixing Amplifier
Power Amplifier Using Operational Amplifier
Voltage Controlled Oscillator Circuit
Operational Amplifier Buzzer
Burglar Alarm
Hand-Operated Sweep Oscillator
Falling Bomb Sound
Emergency Siren
First Aid Siren
Musical Tempo Generator
Operational Amplifier Winking LED
LED Flashing Light
Two-LED Winker
One Shot Light
LED Initials
Wake Up Siren
Voice-Activated LED
Logic Tester
Alternating Current Sound
Light Control Sound Circuit
Sound Alarm Circuit
Study Timer
Kitchen Timer
Three-Input AND Gate Using Operational Amplifier
Voice Level Meter
Power-On Reset Circuit
Delayed Timer
Pulse Frequency Doubler
White Noise Generator
DC-DC Convertor with Operational Amplifier
Code Practice Oscillator with Tone Control
Crystal Set Radio (Simple-Diode Radio)
Two-Transistor Radio
Wireless Code Transmitter
AM Radio Station
Operational Amplifier Radio
Aural Continuity Tester
Conductivity Tester
Transistor Checker
Sinewave Audio Oscillator
Low Distortion Sinewave Oscillator
Twin-T Audio Oscillator
Pulse Oscillator Tone Generator
Audio Signal Tracer
Radio Frequency Signal Tracer
Square Wave Audio Oscillator
Sawtooth Wave Oscillator
Rain Detector
Water Level Buzzer with Operational Amplifier
Metal Detector
Water Level Alarm
Three-Step Water Level Indicator

This Lab is a perfect start to a great new hobby in electronics, whether it's for you, your kids, or your friends. *When these came in I took one home to my 11 year old son, and he went wild! Then he built the SWL Radio Kit (SR3, Page-67) and listened to overseas radio broadcasts for the first time. He's now asking me what surface mount technology is all about! (Sure beats him glued to the TV playing video games...)*

PL130 **130 In 1 Electronics Lab With Comprehensive Learning Manual** **$42.95**

KIT

Complete 300 In 1 Electronic Lab

300 Projects Plus Theory!

- ✔ **Build 300 exciting electronic projects**
- ✔ **Solderless connections for safe assembly**
- ✔ **No tools required!**
- ✔ **165 page comprehensive instruction & theory manual!**

After we introduced our PL130 lab kit we were amazed at the customer response. Hundreds and hundreds were ordered, and re-ordered by everyone you could imagine! From parents for their kids, to grandparents for THEIR kids and grandkids, the response has been the same..."THEY LOVE IT!". We've expanded our line to include this 300 in one lab kit, and the 500 in one lab kit on page 66. Just like the PL130, this lab includes an incredible 165 page comprehensive manual covering the construction of EACH project and the theory behind it. ***Includes ALL of the projects in the PL130 PLUS THE FOLLOWING:***

Surprise and Fun
Light-Controlled Bird
A Transistor Radio
Sound Scooper
American Patrol Car Siren
Digital Roulette
IC Organ

Back to the Basics
Light Telegraph
Introducing the Resistor
Parallel Resistor
Meet the Diode
The LED-a Special Diode
The Electronic Gas Tank
Meet the Transistor
Transistor as switches
PNP Transistor Switch
NPN Transistor Switch
Delay Light
Night Light
Electronic Timer
Capital Letter Display
Small Letter Display
Number Display

Electronic "Building Blocks"
An Inverter Circuit
Meet the OR Gate
Introducing the AND Gate
Using the NOR Gate
Meet the NAND Gate
How a Multivibrator Works
A "One-Shot" Multivibrator
An R-S Flip Flop
Meet the Oscillator
Changing Oscillation with Capacitor
Changing Oscillation with Foreign Substance
More about Oscillator
A Push-Pull Oscillator

Putting Electronics to Work
CdS Controlled Oscillator
Frequency Shift Oscillator
Motion Detector
Door Alarm
Rapid LED Display Switching
Code Practice Unit
Current Switch
Two-Tone Buzzer
Astable Multivibrator
Monostable Multivibrator
Code Practice Unit
The Noisy Light
Hearing Aid Amplifier
Light/Sound Code Practice Unit
Light Controlled Burglar Alarm
DC-DC Converter
Count Down Timer
Transistor Frequency Doubler
One Transistor Full-Wave Rectifier

Radio Circuits
"Crystal Set" Radio
"Funny Transistor" Radio
Remote Water Level Detector
IC Radio
Morse Code Transmitter
AM Transmitter
Broadcasting Organ

Sonic Zoo and Sound Factory
Plant Growth Stimulater
Electronic Woodpecker
Fish Caller
Electronic Raindrops
Machine Gun Pulse Detector
Chirping Bird
Electronic Bird
"Horror Movie" Sound Effect
Sound Machine I
Sound Machine II
Multi-Tone Siren
Digital Rhythm
Two-IC Electronic Organ

Electronic Decision-Makers
Majority Logic Gate
Electronic Coin Toss
Electronic Coin Toss II
Electronic Coin Toss III
Even or Odd
Quick Draw Game
Close-In
ESP Tester
The Light Fantastic
Shooting Game
Marching LEDs
Electronic Dice
Electronic Roulette

Operational Amplifier IC Can Do Many Things
Meet the VCO
Silicon Diode Solar Cell
Astable Multivibrator Using OP Amplifier
Pulse Generator
Experiment of Comparator
Comparator with Hysteresis
Constant Current Sources by OP Amplifier
Non-Inverting Adder
Touch Switch Using OP Amplifier
Early Bird
DC-DC Converter by OP Amplifier
Inverting Amplifier
Non-Inverting Amplifier
Differential Amplifier
Differential Output Amplifier
Power Amplifier Using OP Amplifier
Balanced Transformerless Amplifier
Three-Stage Differential Amplifier
VCO Using OP Amplifier
Voltage Controlled Amplifier
V-F Converter
F-V Converter
Sweep Generator
Multiple-Function IC Project
Sound Alarm
Photo Organ
Vibrato Organ

Introducing the Power Amplifier IC
IC Power Amplifier
IC Power Amplifier II
Oscillator Using Power Amplifier IC
CdS Controlled IC Oscillator
Phase Shift Oscillator
Intercom
A Water Service Pipe Sound
Electronic Klaxon
Wide Range Audio Frequency Oscillator

A Trip to Digital Land
Switching Circuit
RTL Inverter
RTL Buffer
RTL OR Gate
RTL AND Gate
Transistor OR Gate
Transistor AND Gate
Transistor XOR Gate
Special NAND Gate
DTL OR Gate
DTL AND Gate
DTL NOR Gate
DTL NAND Gate
DTL Exclusive OR Gate
C-MOS Inverter
C-MOS Buffer
C-MOS OR Gate
C-MOS AND Gate
C-MOS 3-Input And Gate
C-MOS NOR Gate
C-MOS 4-Input NOR Gate
C-MOS 4-Input NOR Gate II
DeMorgan's Theorem
Experiment of Threshold Voltage
NAND/NOR and Transistor Switch

More Adventures in Digital Land
C-MOS XOR Gate
C-MOS NAND Enable Circuit
C-MOS AND Enable Circuit
C-MOS OR Enable Circuit
A One-Shot NAND Gate
C-MOS Line Selector
C-MOS Data Selector
C-MOS R-S Flip Flop
C-MOS Flip Flop II
Set/Reset Buzzer
Set/Reset Buzzer II
Set/Reset Buzzer III
Transistorized Toggle Flip Flop
NAND Toggle Flip Flop
J-K Toggle Flip Flop
C-MOS Astable Multivibrator
C-MOS J-K Flip Flop
C-MOS D Flip Flop
C-MOS D Flip Flop II
R-S-T Flip Flop
T Type Flip Flop
C-MOS Latch
Shift Register
Touch Switch Using NAND Gate
Half Adder
D-Latch
2-Line to 4-Line Decoder
Multiplier
Dual 2-Input Multiplexer
Two-Stage Frequency Divider

Circuits That Count
Basic Counter
Synchronous Counter
Asynchronous Counter
Counter with Line Decoder
Divide by 4 Counter
Divide by 4 Counter with Line Decoder
How a Line Decoder Works
Multiple Counter
Binary Counter with Display
Divide by 3 Counter Display
Divide by 4 Counter Display
Up/Down Counter
Down Counter
Decade Down Counter
Decade Down Counter with Display
Presettable Counter
Hexadecimal Counter
Octal Counter
Random Access Display
Decade Counter
BCD Counter with Display
Octal Counter with Line Decoder
Octal Counter with Display
Decade Counter with Display
Decade Counter with Display II

Getting Closer to Computers
BCD to 7-Segment Decoder
Full Adder
Decimal to Binary Encoder
Binary to BCD
Octal to BCD
Hexadecimal to BCD
3-Bit Shift Register

Amusement in Digital Land
VCO by NOR Gate
Pulse-Delayed Circuit
NAND Gate Tone Generator
Transistor Timer
Noise-Signal Discriminator
Pulse Stretcher
Bidirectional Buffer
Various Inverters
Electronic Switch
Tone Burst Generator
Digital Timer
Digital Timer II
Ten Count Buzzer
Press First
Target Range
Catch the Eight
SOS Alert
Wheel of Fortune
Leapin' LEDs

Shakehands of Analog and Digital
Pulse Number Modulation Light Dimmer
Pulse Width Modulation Light Dimmer
DC-DC Converter Using the C-MOS Oscillator
Absolute Value Amplifier
Window Comparator
Digital Light Dimmer
A-D Converter
D-A Converter
Photometer with Digital Display
Surprise and Fun Revisited
Experiment of Electromagnetic Induction
Electronic Candle
Constant Current Circuit
A Phony Counter
Alphabet Flasher
Winking LEDs II
Delayed Timer II
Crossing Signal
Octave Generator
Sound Out Timer
Sound Stop
Big Mouth!
Light or Sound
Be Your Own Multivibrator
Anticipation
Set/Reset Match

Testing and Measuring Circuits
Circuit Continuity Checker
Acoustic Ohmmeter
Audio Signal Generator
Temperature-Sensitive Audio Amplifier
Water Level Detector
Battery Checker
IC Oscillator/Component Tester
Voltage Drop Alarm
Current Shut-Down Circuit
Logic Checker
Logic Checker II
Temperature Alarm
Function Generator

PL300 **300 In 1 Complete Electronics Lab With Comprehensive Learning Manual** **$69.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

Advanced 500 In 1 Electronic Lab

KIT

- ✔ 152 page starter course manual!
- ✔ 78 page advanced course manual!
- ✔ 140 page programming course manual!
- ✔ Quality hinged case construction

Advanced Learning Courses Plus 500 Separate Projects!

We went one step beyond our 300 in one lab kit! Yes, 500 in one, PLUS comprehensive learning course manuals! Build 500 exciting projects, learn schematics, build and learn both analog and digital circuits, and even get into digital programming. 500 projects, 370 pages of comprehensive course manuals, and LOTS OF FUN! ***Includes ALL of the projects in the PL130 AND the PL300 PLUS THE FOLLOWING:***

Back to the Basics
Capacitors in Series and Parallel

Electronic "Building Blocks"
Low Distortion Sinewave Oscillator

Putting Electronics to Work
Strobe Light
Electronic Grandfather Clock
Electronic Metronome
Twin-T Audio Oscillator
Current Switch
Shot in the Dark
Variable R-C Oscillator
Two-Tone Buzzer
Sawtooth Wave Oscillator

Radio Circuits
Wireless Code Transmitter

Sonic Zoo and Sound Factory
Two-Tone Patrol Car Siren
Pencil Lead Organ
Electronic Motorcycle
Machine Gun Pulse Detector
Electronic Siren
Electronic Cat
Electronic Organ

Electronic Decision-Makers
Majority Logic Gate
Electronic Coin Toss
Electronic Coin Toss II
Electronic Coin Toss III
Even or Odd
Quick Draw Game
Close-In
ESP Tester
The Light Fantastic
Shooting Game
Marching LEDs
Electronic Dice
Electronic Roulette

Operational Amplifier IC Can Do Many Things
Integrating Circuit
Pitch Doubling Circuit
Pitch Doubling Circuit II
Comparator
Schmitt Trigger Circuit
Delayed Timer
Pulse Frequency Doubler
Touch Switch Using OP Amplifier

Surprise and Fun Revisited
Experiment of Electromagnetic Induction
Winking LEDs
Voice Level Meter
Buzzin' LED
Son of Buzzin' LED

Testing and Measuring Circuits
Audio Signal Tracer
Metal Detector
Rain Detector
Burglar Alarm
Temperature-Sensitive Audio Amplifier

Learn Basics More
A Basic of Control Volume
Emitter Follower
Basic Operation of Zener Diode
Zener Voltage Checker
Zener Voltage Checker II
Basic Photo-Transistor Operation
Voltage Drop Circuit by Means of Diodes
Experimentation of Capacitor Temperature Characteristic
Darlington Circuit (Touch Sensor)
Edge-Trigger Circuit
RC Type Differentiating Circuit
Switch Matrix Circuit
Memory Backup Circuit
Power on Reset Circuit
Constant-Voltage Circuit (Fixed Output)
Constant-Voltage Circuit (Variable Output)
A Rectifier Circuit by Diode Bridge
AGC Circuit Using a Single Transistor
Upper/Lower Limiter Circuit Using OP Amplifier
Window Comparator II

Amusement on Sound
Multi-Tone Siren
Digital Rhythm
Two-IC Electronic Organ
A Water Service Pipe Sound
Electronic Klaxon
Sound Machine III
Sound Wave Varying with Light Intensity
Player Organ
Sound of Passing Siren
Light Source Sensing Circuit by Sound
Electronic Piano Circuit
Whistle Generating Circuit
Space Gun
Car Horn

More Radio Circuits
Morse Code Transmitter
Broadcasting Organ
FM Transmitter (FM Wireless Microphone

To The Game World
Quiz Winner Detector
Reflex Nerve Test Game
Shooting Game II
Shot In The Dark II
Sound Quiz
Stop the Seven
High-Power Switch
"Lockout, Mr. Blackbeard!" Game
Russian Roulette
Mole Hitting Game
"Janken" Game
Ping-Pong Game

More Adventures in OP Amplifier Circuits
Voltage Controlled Amplifier
V-F Converter
F-V Converter
F-V Converter II
White Noise Generator
Sweep Generator
Multiple-Function IC Project
Sound Alarm
A Sound of Ripples
Photo Organ
Vibrato Organ

More About Oscillation
Phase Shift Oscillator
Wide Range Audio Frequency Oscillator
Sawtooth Wave Oscillator II
Three Phase Oscillator
Wien-Bridge Oscillator
Ramp Wave Generator
Digital Sine Wave Generator
Frequency-Variable Sine Wave Generator
Sine Wave Oscillator Using D-A Converter
RC Phase-Shift Oscillator
Two Sine Waves with Different Phases
One-Shot Multivibrator Using IC 555
One-Shot Multivibrator Using J-K Flip-Flop
One-Shot Multivibrator Using OP Amplifier
Shakehands of Analog and Digital
Pulse Number Modulation Light Dimmer
Pulse Width Modulation Light Dimmer
DC-DC Converter Using the C-MOS Oscillator
Photometer with Digital Display
Pulse Width Modulation Light Dimmer II
Voltmeter

Getting Closer to Computer
Full Adder
Decimal to Binary Encoder
Binary to BCD
Octal to BCD
Hexadecimal to BCD
3-Bit Shift Register
BCD-To-Decimal Decoder
More Digital Circuits
4-Input Data Selector
AND/OR Circuit Using OP Amplifier
XOR Using OP Amplifier
Time Sharing Display of LEDs
LED Lighting-Duty Varying Circuit Using One-Shot Multivibrator
LED Blinking-Cycle Varying Circuit Using Astable Multivibrator
LCD Static Drive Circuit
LCD Dynamic Drive Circuit
Testing LCD Display Response
LED Drive by 4 Switches
Flashing LED by Preset Number
Digital Timer (1 to 7 Minutes)
Sound Timer
Programmable Timer with Down Counter

Amusement in Electronic Circuits
Revolving Light
Photo Switch
Door Chime
Visitor Sensing Chime Using Photo-Transistor
Touch VCO
Sound Tuning Circuit
Crossing-Bell Sound Generator
Turn Indicator
Staircase Light Switching Control Circuit
Pseudo Candle Circuit
Lie Detector
Light Sensing Circuit
Automatic Lighting LED
Sound Sensing LED
Illumination Lamp
Intercom
PIP Sound Interphone
Electronic Volume
Pedestrian Signal
Time Counter
Led Display Counting Up/Down Circuit
An Electronic Pendulum
Staircase Light Switching Control Circuit II
Lamp Brightness Control Circuit
Illumination Circuit with 4-LEDs
A Simulated Car Winkers

Testing and Measuring Circuits
Battery Checker
Conductivity Tester
Transistor Checker
Three-Step Water Level Indicator
Tachometer
Battery Checker II
Digital Illuminometer

Software Projects
Light LEDs
Light On/Off LEDs
A Binary Counter-Increment Value by ADD Instruction
A Binary Counter-Decrement Value by SUB Instruction
Light LEDs Sequentially with AND Instruction
Light LEDs Sequentially with OR Instruction
Turn On and Off LEDs Sequentially with XOR Instruction
Moving LEDs Light with ROL Instruction
Moving LEDs Light with ROR Instruction
Night Rider's LEDs with ROL/ROR Instructions (1)
Night Rider's LEDs with ROL/ROR Instructions (2)
Binary Counter with INC Instruction
Binary Counter with DEC Instruction
Sound Do as Do, Re, Mi
Sound a Series of Musical Scale
Let's Input Data to Program
Hidden Key Triggers Sound and Turns All LEDs On
Stacked MOV Instructions
Changing Order of LEDs by Switch
A Musical Scale Sound by S1 Key
Arithmetic Addition of of Two Binary Values
Arithmetic Subtraction of Two Binary Values
Arithmetic Multiplication of Two Binary Values
Arithmetic Division of Two Binary Values
Displays Number 0 to 9 on 7-Segment LED (2)
Change Order of Numbers Display on 7-Segment LED (2)
Switches S1-S4 Light Hex Number On 7-Seg LED
8-Key Organ
Lighting Spade, Diamond, Heart, and Club on the LCDs Display (Basic)
Lighting Spade/Heart and Diamond/Club on the LCDs Display
Lighting Spade, Diamond, Heart, and Club by Static Drive Circuit
Lighting Spade, Diamond, Heart, and Club by 1/2 Duty-1/2 Bias Circuit
Lighting Spade/Diamond and Heart/Club by 1/2 Duty-1/2 Bias Circuit
Lighting Spade/Diamond and Heart/Club Alternately by 1/2 Duty-1/2 Bias Circuit
Lighting Spade, Diamond, Heart, and Club by 1/2 Duty-1/2 Bias Circuit
Results of Logical Operations AND, NAND, OR, and NOR
Results of Logical Operations XOR and XNOR
Results of Logical Operations AND/NAND with 4-Switch Entry
Results of Logical Operations with OR/NOR 4-Switch Entry
Results of Logical Operations with XOR/XNOR 4-Switch Entry
Logical AND/NAND Gate for Driving External Circuit
Logical OR/NOR Gate for Driving External Circuit
Logical XOR/XNOR Gate for Driving External Circuit
Find a Leading Edge of Input Pulse
Finding a Trailing Edge of Input Pulse
Finding a Leading and Trailing Edge of Input Pulse
A Pulse Stretcher
Starting a Delayed Pulse
Pulse Stretcher By Counting a Clock
Counting External Pulse To Advance Decimal Counter
Displays Number 0 To 9 on 7-Segment LED (1)
Change Order of Numbers Display on 7-Segment (2)
Counts an External Clock (1)
Counts an External Clock (2)
Counts an External Clock (3)
Counts an External Clock (4)
Counts an External Clock (5)
Counts an External Clock (6)
3-Minute Timer
Multi-Function Timer (1)
15-Minute Timer with 7-Segment Display
Multi-Function Timer (2)
Digital Organ with PHOTO-TRANSISTOR (1)
Digital Organ with PHOTO-TRANSISTOR (2)
Digital Volume Changer (1)
Digital Volume Changer (2)
Digital Volume Changer (3)
Digital Volume Changer (4)
Digital Volume Changer (5)
Illumination Controlled by PHOTO-TRANSISTOR (1)
Illumination Controlled by PHOTO-TRANSISTOR (2)
Illumination Controlled by Oscillator and PHOTO-TRANSISTOR (1)
Illumination Controlled by Oscillator and PHOTO-TRANSISTOR (2)
Illumination with Speed Control (1)
Illumination with Speed Control (2)
Sawtooth Waveform Generator
Triangular Pulse Generator
Digital Level Indicator
Digital Lux Meter (Display In Binary)
4-Bit A/D Converter (Display In Binary)
4-Bit A/D Converter (Display In Hexadecimal On 7-Segment LED)
Digital Lux Meter (Display In Hexadecimal)
Audio Level Meter
Audio Level Meter with Peak-Holding Capability
Lighting Sign Board
Digital Dice
Digital Roulette
Digital Slot Machine
Up/Down Counter
Digital Metronome
Frequency Counter
Dynamic Lighting of 7-Segment LED
Lighting LED with Pulse Width Modulation
Majority Logic Gate (2)
Lighting LCD Segments by Static Drive
Digital Buzzer
Rhythm Box (1)
Rhythm Box (2)
Rhythm Box (3)
Rhythm Box (3)
(Hey, sorry for the 5.5 pitch font, but there's only so much room! Editor!

PL500 **500 In 1 Advanced Electronics Learning Lab With Advanced Course Manuals** **$169.95**

Build It. Learn It. Achieve It. Enjoy It! ramsey Fun Electronics...Now in our 34th Year!

AM/FM/SW Radio Learning Kits

- ✔ Learn to build your own AM, AM/FM or SW radio!
- ✔ Discover how radios work!
- ✔ Listen to the results!
- ✔ Safe solderless assembly!

KIT

AM2 AMFM7 SR3

As the "Little Brothers" to our 130 In 1 Lab Kit (PL130, Page-64) our Radio Learning Kits teach you the fundamentals of modern radio theory and operation, and give you a working radio when you're finished! There's nothing like the feeling of accomplishment when you get all done, plug in the battery, and hear it work! Yes, you did it yourself! Our Radio Kits are available in AM Broadcast, AM/FM Broadcast, and AM Shortwave models. Take your pick! All operate on a standard 9V battery.

AM RADIO

Our AM2 AM Radio kit uses two transistors, 4 resistors and 5 capacitors including a variable capacitor to provide a highly sensitive AM Broadcast Radio. It covers 520 KHz to 1625 KHz and is easy to assemble with safe, solderless connections. The 18 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation.

AM/FM RADIO

Our AMFM7 AM/FM Radio kit is the next step up from our AM2 kit above. It features the same quality AM radio and adds a factory assembled and aligned FM tuner to cover the 88 MHz to 108 MHz FM broadcast band. Utilizes 2 transistors, 5 resistors, 6 capacitors, 1 diode, and 1 coil to provide reception in either band. The AMFM7 is easy to assemble with safe, solderless connections. The 20 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation.

AM SHORTWAVE

Our SR3 Dual Band AM Shortwave Radio Kit takes you away from the local AM/FM broadcasters and brings you into the exciting world of Shortwave Radio Listening (SWL)! The preassembled and aligned tuner section adds to the 2 antennas, 4 capacitors, 4 resistors, 1 transistor, and 1 variable capacitor to provide a sensitive Shortwave Radio covering 6 MHz to 8 MHz and 12 MHz to 18 MHz. The SR3 is easy to assemble with safe, solderless connections. The 20 page comprehensive learning and assembly manual covers everything from theory to parts identification and operation. Operates on a standard 9V battery (not included).

AM2	**AM Radio Kit With Comprehensive Learning Manual**	**$12.95**
AM/FM7	**AM/FM Radio Kit With Comprehensive Learning Manual**	**$14.95**
SR3	**AM Dual Band Shortwave Radio Kit With Comprehensive Learning Manual**	**$14.95**

KIT

Entry Level Learning Kits

Start With The Basics!

- ✔ Learn the basics of electronics and electricity!
- ✔ Discover how to listen to AM radio without a battery!
- ✔ Understand and build a working motor!
- ✔ Learn how and why bells work...and build one!

Go back in time and discover how radio was first received! Learn the basics of electric motors including forward and reverse action. And while everyone has heard them, learn exactly how a bell works, and then build one yourself! These beginner kits are ideal for the inquisitive mind that wants to know "how and why it works". No previous experience in electricity or electronics is required, and all kits use safe, solderless connections.

CRYSTAL RADIO SET

The crystal radio was discovered in 1901. It is still the basis of modern-day radio and communications equipment and lives on in a wide variety of radio systems. Go back in time, and learn how radio detection was first done! Without a battery or power supply, you will hear AM broadcasts with your Crystal Radio Set! They contain so few parts yet display so many concepts. The comprehensive 16 page manual covers everything from how it works to why it works, with illustrated assembly instructions. Assembly is easy with solderless connections, and no previous electronic experience is necessary. Relive history with a Crystal Set today!

MOTOR ACTION KIT

Learn the basics of an electric motor with our MA1 Motor Action Kit. Learn what makes motors spin, how to control forward and reverse in a motor, and then build one that works! Includes a fan blade and a color disk to learn how to mix color with a spinning disk! This is a great kit for the kids and for the beginner to learn just what makes the world go round! Easy assembly with solderless connections. Requires two AA batteries (not included).

BELL ACTION KIT

Ding-a-ling...is that a bell? Yep, we've all heard them, but do you know exactly how they work? Our BA1 Bell Action Kit is a perfect learning kit for the beginner or the curious! Learn what makes a bell ring, explore how electromagnetism is used, and how you can change the ringing characteristics of a bell! This kit is fun and safe, using solderless connections. Requires two AA batteries (not included).

CS2	**Crystal Radio Kit**	**$9.95**
MA1	**Motor Action Kit**	**$8.95**
BA1	**Bell Action Kit**	**$8.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

Talking Alarm Clock Kit

NEW!

- ✔ Easy assembly without soldering!
- ✔ Creates three alarm sounds!
- ✔ Kids love them

Wake Up!

The Talking Clock Kit teaches you how electronic voices are made and is a real hit with the kids!

With the detailed and full color assembly and theory manual building the clock is a breeze, and there is no soldering required. When you're done you have a running alarm clock that features hourly reports as well as a "rooster crow" for an alarm! Runs on 2 standard AA batteries, not included. From AmeriKit.

AK220 Talking Clock Kit KIT $19.95

Radio Controlled Car Kit

NEW!

- ✔ 7 remote control functions!
- ✔ Includes remote control!
- ✔ Full color assembly manual

Build It From The Ground Up!

One of the neatest and most exciting learning kits for the kids! You will be building the Turbo King R/C speedster from the ground up, ending up with a super fast car!

The detailed theory, assembly, and testing manual guides you through basic transmitters, receivers, and electronic switching theories. You'll also learn about gears, motors, integrated circuits, and printed circuit boards! You will construct each segment, explore the circuitry used, and test and troubleshoot it. The end result? Turbo King with 7 remote functions, flashing top light and a full feature remote control! Electronics runs on a standard 9VDC battery and mechanics run on 4 standard AA batteries, not included. From AmeriKit.

AK870 R/C Car Kit KIT $32.95

Solar Training Course

- ✔ Includes 8 solar panels
- ✔ Comprehensive training manual included
- ✔ Starts at the beginning of solar power technology

See Things Work With Solar Power!

NEW!

For the beginner you learn the how's and the why's of Solar Energy. Find out how you can harness the power of the sun to convert light into electricity for a multitude of uses!

Light a light bulb, sound a buzzer, power a fan, and many other applications. The learning kit comes complete with 8 solar panels, electric motor, propeller, buzzer, light bulb, wires and hardware. The detailed teaching manual covers all aspects of Solar Energy so when you get done you'll know exactly why it works!

Nope, this one doesn't require any batteries because it doesn't use any! It uses the Sun! Check out the advanced kit to the right.

SK20 Solar Training Kit KIT $23.95

Telephone Kit

NEW!

- ✔ See-through case!
- ✔ Detailed training course included!
- ✔ Full featured tone/pulse phone

Learn How You Make That Call!

A very popular learning kit for young and old...or for anyone in between that uses a telephone and wants to know how they work!

The full feature push button electronic telehone is housed in a transparent case to see the inner workings. Features pulse/tone dialing, automatic redial, ringer on/off, and neon bulbs that light up when it rings! A complete training course is included with detailed theory, assembly and testing sections. Can be desk or wall mounted. Soldering is required. From AmeriKit.

AK700 Telephone Kit KIT $21.95

Beamster Emergency Light Kit

NEW!

- ✔ Great beginner soldering project!
- ✔ Halogen and fluorescent lamp modes!
- ✔ Ideal for boating, camping, or emergencies

Learn Soldering And Light Up Your Life!

The "Beamster" is a great new beginner's soldering learning kit that provides you with a multi-purpose emergency light. Super for outdoor activities and power failures!

The light contains a high output Halogen as well as a portable fluorescent tube. Four modes include Beam (Halogen), Full Fluorescent, or Low Fluorescent energy saver. Also features a 90° swivel head and a magnet back. Detailed manual covers soldering, assembly and theory. Runs on 4 standard AA batteries, not included. From OwiKit.

OWI209K Beamster Light Kit KIT $19.95

Deluxe Solar Kit

NEW!

- ✔ Includes 8 solar panels
- ✔ Comprehensive training manual included
- ✔ Starts at the beginning of solar power technology

Put The Sun To Work!

A great hands-on educational kit to learn exactly how Solar Energy works. Provides a neat bank of solar cells and all the related experiment materials to put the energy to work.

A unique solar cell "unit" provides a bank of solar cells that provide three independent 1.5VDC sources of power. Jumper connections with EZ connections are provided to wire up any of your experiments. Includes a motor, lamp, buzzer, tools, optical disks, and other accessories. You can easily learn how to make a solar circuit and how to increase or decrease voltage or current using series and parallel circuits.

You will be amazed when you produce power to run your small radio, calculator, cassette player and more.

SK40 Solar Deluxe Educational Kit KIT $17.95

Practical Soldering Kit

NEW!

- ✔ Learn soldering and PC boards!
- ✔ Includes practice exercises!
- ✔ Comprehensive training manual

Learn To Solder!

This is a beginner's project specifically designed to teach you the fundamentals of soldering and working with printed circuit boards.

Like any skill, good soldering requires practice as well as an understanding of the principles involved. You will become familiar with PC boards, the how's and why's of soldering, components, component installation, and troubleshooting soldering problems (including solder bridges!). Project runs on a standard 9VDC battery, not included.

SP1A Practical Soldering Kit KIT **$9.95**

Practical Solder & Parts Kit

- ✔ Learn soldering, boards, and components!
- ✔ Learn color codes!
- ✔ Comprehensive course and exam included

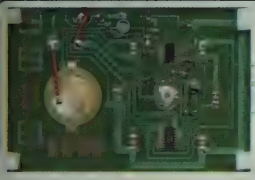
Learn Soldering & Components! NEW!

Not only will you learn soldering and desoldering but you will also learn component identification and color codes.

With 163 solder points, you will learn and practice standard soldering, close tolerance soldering, tack soldering and desoldering. Plus you will learn component identification and complete color codes. Even includes a color code calculator! Also learn voltage and resistance analysis in circuits. Comprehensive manual includes written and visual exams. Project runs on a standard 9VDC battery, not included.

SP3B Practical Soldering & Parts Kit KIT **$9.95**

Practical Surface Mount Technology (SMT) Soldering Course



NEW!

Learn & Practice SMT Component Soldering!

- ✔ Learn all about those tiny little parts!
- ✔ Develop and practice your SMT soldering skills!
- ✔ Includes SMT training sessions
- ✔ End up with a neat "Decision Maker" project

Surface Mount Technology (SMT) has become a way of life for electronics. Virtually all new high tech products utilize SMT design and components. Even our latest Ramsey kits include various SMT components. There are two problems with SMT: First, the parts are extremely small, at times the size of a pin head! Therefore, you need to have the proper tools, not only to hold them and solder them, but to see them! Check out our SMT tools on page 95. Secondly, unlike "through hole" parts, SMT components are soldered directly on the surface of the PC board (hence the name SMT!) This is an entirely new method of soldering, and it takes practice to get it right. Trust me, I've created a number of solder bridges myself when I first started soldering SMT components!

Taking this course and practicing on the neat little kit wil prepare you for the future in electronics. Includes the PC board, all the SMT and other components required, and a comprehensive training course covering all aspects of SMT soldering, desoldering, removing, and component placement. The finished project is a neat little "Decision Maker" that includes 6 flashing SMT LEDs, complete with a professional overlay panel. The finished Decision Maker runs on a standard 9VDC battery, not included. *(Hey, I mentioned that I created solder bridges when I first soldered SMT... now I can't even see them without my reading glasses!)*

SM200K **Practical SMT Soldering Course** **$20.95**

Practical Fiber Optics Learning Kit

- ✔ Have a lot of FUN while working with Fiber Optics!
- ✔ 20 different experiments!
- ✔ Detailed learning manual covers it step-by-step
- ✔ Build a handful of decorative items while learning

Learn The Basics Of Fiber Optics And Have Fun!

NEW!

Not long ago fiber optics was little more than a laboratory curiosity. Physicists and scientists in research labs were the only people doing much work in this field.

In the last 20 years all that has changed. From its obscure beginnings in the back of a lab, fiber optics has become an important and rapidly changing technology. It employs many of the world's brightest scientists and business people. With this kit anyone can follow the exploits of famous experimenters such as Galileo, Franklin, Tyndall and Gould, begin to explore fiber optics starting with the very basics and learn more about the fascinating potential of fiber optical technology.

Includes a comprehensive instruction and learning manual to complete 20 exciting experiments and 5 unique projects including bending a light guide, fluorescence, Tyndalls's prestigious experiment, fiber optic lighting, the art of polishing glass, making your own image conduit, creating a holiday ornament, and a lot more. Order additional fiber optic cable on page 70. Learn how fiber optic is used for data and voice communications with our advanced kit on the following page.

FO25 **Practical Fiber Optic Learning Kit** **$49.95**

Practical Fiber Optics Voice & Data Kit KIT

NEW!

- ✔ Send voice over fiber optic cable!
- ✔ Includes transmitter, receiver, and fiber optic cable!
- ✔ Learn the theory and exactly how it works!
- ✔ Fiber length can be extended

Fiber Optics, Used For More Than Holiday Decorations!

Have an adventure with Fiber Optics and learn at the same time! At one time fiber optics technology was just used for those cute little holiday trees you see at the stores. Then they realized that fiber can be used for communicaions and data transmission without the problems and line loss of conventional "copper circuits". Today fiber networks carry the bulk of the telephone, CATV and broadcast television programs, replacing land lines, microwave, and satellite communications. Just like SMT on page 64, fiber optic technology IS the wave of the future!

While this project and course will not build you a nationwide fiber communications network, you WILL learn the basics of fiber optics and its use in telecommunications. The learning kit includes a transmitter board, receiver board, fiber optic cable, and a comprehensive learning course. The transmitter converts an audio signal into a light signal. The receiver accepts the light and converts it back into an electrical signal. You will learn how the converted signal is then reshaped into the proper form to be heard.

Fiber optic cable, its protective covering, and connectors to attach the cable to the transmitter and receiver are also included. PC board soldering is required. The transmitter and receivers both utilize a standard 9VDC battery, not included. FO25 is a great project kit to learn about Fibre Optics *(there, I spelled Fiber the way I like it!)*

FO30K	**Fiber Optics Voice & Data Learning Kit**	**$20.95**
FOC20	**Fiber Optic Cable, 1,000µm (sold by the foot)**	**$.85/ft**

Fiber Optic Lab Kit

- ✔ Learn and experiment with fiber!
- ✔ Includes experiments!
- ✔ Detailed training manual included

Learn By Doing! NEW!

Learn all about fiber optics, from its history all the way through applications and uses for fiber with this comprehensive course.

The course includes a 61 page detailed training manual and all the materials and parts necessary to conduct nine stimulating experiments related to fiber optic communications. Will give you a greater understanding of fiber optic techniques by using real fiber optics hardware and parts with hands-on experiments. The lab portion can be used with the included course or as a supplement to an existing course.

FO40K Fiber Optic Lab Kit KIT **$64.95**

Understanding Fiber Optics

- ✔ Comprehensive training video tape!
- ✔ From the basics to splicing!
- ✔ Lets you see it working up close

Learn Fiber Optics At Home! NEW!

Learn tomorrow's fiber optic technology today with an easy to understand videotape course!

Learn and understand fiber optic tehnology and exactly how fiber optic cables are made and used! You will also examine and see firsthand how to use cables, connectors, couplers, splicers, transmitters, and receivers. This videotape presentation is a great stand-alone learning aid or a great visual supplement to our FO40K learning lab or any other written fiber optic training course. Running time is 58 minutes.

VT501 Understanding Fiber Optics Video Tape **$39.95**

Fiber Tool Kit

- ✔ Everything you need!
- ✔ For 1,000µm fiber

No More Damage! NEW!

This handy tool kit contains everything you need to properly maintain standard 1,000µm plastic fiber cable.

Nicked and damaged fibers will be a thing of the past! Includes a no-nick stripper, hot knife cutting tool, termination fixture, and custom carrying case.

TK50 **Fiber Optic Tool Kit** **$169.95**

Fiber Splice Kit

- ✔ Mend and splice fiber!
- ✔ For 1,000µm fiber

Everything You Need! NEW!

Contains the materials needed for mending and extending standard 1,000µm plastic fiber optic cable.

Contains sleeves and retention clips and cable to complete 10 splices. No tools required. Also includes detailed instructions and learning manual.

TK25 **Fiber Optic Splice Kit** **$12.95**

Kevlar® Cutter

- ✔ Ceramic blades!
- ✔ Designed for fiber

Cutting Made Easy! NEW!

Easily trim Kevlar strength fiber optic cable members with these specially designed shears. The ceramic blades cut Kevlar and fiber optic components quickly and precisely.

Don't trust normal cutters when working with fiber optics; these cutters assure you of a clean cut.

ST340 **Ceramic Fiber Cutter** **$29.95**

SNAP CIRCUITS

ELENCO

Brand new Snap Circuits make learning electronics a "snap"! Just follow the colorful pictures in the comprehensive manuals and build over 750 projects such as AM/FM radios, burglar alarms, flashlights, doorbells, and much more. You can even play electronic games with your friends. Enjoy hours of educational fun while learning about electronics. With the deluxe version, you will also learn about and use an oscilloscope and spectrum analyzer as you build over 20 bonus experi-™ments using your Windows based PC! Comes with all of the PC interface materials and software to get you up and running quickly.

Besides the training labs, Snap Circuits "Mini-Kits" are available as separate projects, making them the ideal "first non soldering kit". Circuits require no tools for assembly and run on standard AA batteries, not included.

MiniSnap Music Recorder

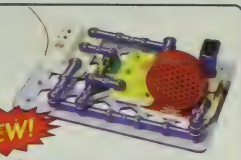
- ✔ Records up to 8 seconds of audio!
- ✔ Plays your music after recorded!
- ✔ Easy to build Snap Circuit design

Snap Together A Recorder! NEW!

The Snap Circuits mini-kit makes the the involved circuit of digital audio storage a snap! Ha, play on words there! This mini snap kit records up to 8 seconds of audio electronically! Like all Snap Circuits, the snap-in components make assembly a breeze. . . without a soldering iron. After assembly the kit provides hours of fun recording and playing back your audio messages. Runs on standard AA batteries.

SCP01 MiniSnap Music Recorder Kit KIT **$21.95**

MiniSnap FM Radio



- ✔ Build a complete FM Radio!
- ✔ Plays your music after recorded!
- ✔ Easy to build Snap Circuit design

FM Radio Is A Snap! NEW!

The FM radio MiniSnap is incredible! By merely snapping together the components and sections of the circuit you end up with a fully functional FM radio! No critical alignment or tuning required. Tunes the FM broadcast band from 88-108 MHz for complete coverage. And like all Snap Circuits, all of this is done without the use of a soldering iron! Runs on a standard 9V battery. Snap together your FM radio today!

SCP02 MiniSnap FM Radio Kit KIT **$21.95**

MiniSnap Motion Detector

- ✔ Detects motion automatically!
- ✔ Provides both audible and visible alarms!
- ✔ Easy to build Snap Circuit design

Snap, Who Goes There? NEW!

Use the MiniSnap method to build yourself a really neat motion detector! Once constructed the unique circuit automatically detects motion in front of it and the distinctive sound of a laser comes out of the built-in speaker along with the sight of a flashing red LED! All components snap together without the use of a soldering iron. Runs on a standard 9V battery.

SCP03 MiniSnap Motion Detector Kit KIT **$21.95**

MiniSnap Music Doorbell

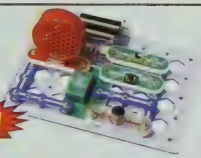
- ✔ Simple pushbutton circuitry!
- ✔ Plays music instead of a bell!
- ✔ Easy to build Snap Circuit design

Snap Away Your Ding Dong! NEW!

Tired of the same old ding-dong? Build a musical doorbell with the ease of a MiniSnap kit! Just a push of a button creates a soft, distinctive musical tune. Follow the full color assembly and learning guide and just snap the components into place. Once assembled you'll be amazed at how well this neat little circuit works. Whether for a doorbell or a simple push to alert circuit, the MiniSnap Doorbell is it! Runs on standard AA batteries

SCP04 MiniSnap Music Doorbell Kit KIT **$14.95**

MiniSnap Space Battle



- ✔ Sounds just like a space battle!
- ✔ Laser ray and explosion sounds!
- ✔ Easy to build Snap Circuit design

Snap, Laser, Pop! NEW!

Amaze yourself and your friends with this little Space Battle MiniSnap kit. Once assembled you create the typical sounds of a Hollywood Sci-Fi movie including laser rays and explosions! Each component of the circuit snaps into the main board making assembly a breeze (I won't say 'a snap' again!). Once assembled, start the Space Battle and learn how an IC can make these sounds as well! Runs on AA batteries, not included.

SCP05 MiniSnap Space Battle Kit KIT **$14.95**

MiniSnap Flying Saucer

- ✔ Rises into the air at your command!
- ✔ Simple pushbutton operation!
- ✔ Easy to build Snap Circuit design

UFO? No, It's A Snap Saucer! NEW!

This is simple yet very interesting and impressive MiniSnap kit. A unique "flying saucer" is affixed on the launcher. At your command (push the button) the saucer takes off and rises into mid air! Simple snap assembly together with the illustrated manual covers the theory of motors, switches, and batteries. Your friends and family will be amazed. Runs on standard AA batteries.

SCP06 Flying Saucer Kit KIT **$14.95**

NEW!

Snap Together Over 100 Electronics Experiments!

KIT

Snap Circuits Jr.

- ✔ **Contains Snap Circuits experiments 1-101!**
- ✔ **Detailed project manual with comprehensive details and illustrations**
- ✔ **Advanced training program & organizer available**

The Snap Circuits Jr. lab includes over 100 electronic experiment projects. Like all Snap Circuits kits, they are easy to build, troubleshoot, and test without the use of a soldering iron!

The components of the circuits and projects are designed as "building blocks" which snap into place on the main project board. Each "block" has a function, including switches, lamps, batteries, wires, LEDs, resistors, photo-resistors, speakers, IC's, motors, fans, and much more.

The illustrated manual covers Snap Circuits projects 1 through 101 with detailed instructions on how to snap the components or "blocks" into place to create the circuit. When you're done you have a great and exciting project that you completed yourself.

A matching educational series training program is also available for the Snap Circuits Jr. that provides an in-depth exploration of the electronic components included with the kit. This program includes a custom parts organizer box to identify and keep track of each "building block" part, as well as a comprehensive student and teacher guide.

SC100R Organizer

The Snap Circuits Jr. includes the following projects, 1 through 101:

Electric Light & Switch	Motor Space Light	Space War Siren
DC Motor & Switch	Space Battle (II)	Quiet Water Alarm
Sound Activated Switch	Silent Space Battle	Light-Controlled Lamp
Adjusting Sound Level	Periodic Sounds	Voice-Controlled Lamp
Lamp & Fan in Series	Blinking Double Flashlight	Motor-Controlled Lamp
Lamp & Fan in Parallel	Motor-Controlled Sounds	Light-Controlled LED
Light Emitting Diode	More Motor Sounds	Sound-Controlled Time Delay LED
One Direction for LED	More Motor Sounds (II)	Motor-Controlled Time Delay LED
Conduction Detector	More Motor Sounds (III)	Space War Flicker LED
Space War Alarm Combo	More Motor Sounds (IV)	Music AND Gate
Flying Saucer	Light-Controlled Flicker	Flash and Tone
Decreasing Saucer Lift	More Sound Effects	Lamp, Speaker & Fan in Parallel
Two-Speed Fan	This OR That	Pencil Alarm
The Fuse	This AND That	Pencil Alarm Variants
Musical Doorbell	Neither This NOR That	Fun with the Alarm IC
Momentary Alarm	NOT This AND That	Motor Sounds Combo
Alarm Circuit	Reflection Detector	Motor Sounds Combo (II)
Laser Gun	Quieter Reflection Detector	Music Alarm Combo
Space War	Flashing Laser Light with Sound	Bomb Sound
Light Switch	Space War Flicker	Bomb Sound (II)
Paper Space War	Spinning Rings	Light-Controlled LED (II)
Light Police Siren	Strobe the House Lights	Touch Light
Loud Sounds	Race Game	Touch Sound
More Loud Sounds (II)	Using Parts as Conductors	Water Space War
More Loud Sounds (III)	Spin Draw	Water Space War (II)
More Loud Sounds (IV)	Space War Flicker Motor	Human Space War
Clap Sounds	Light-Controlled Sounds	Noisier Water Space War
More Clap Sounds	Light-Controlled Sounds (II)	Light/Water Space War
More Clap Sounds (II)	Light-Controlled Sounds (III)	OR/AND Space War Light
More Clap Sounds (III)	Light-Controlled Sounds (IV)	Simple Water Alarm
More Clap Sounds (IV)	Light-Controlled Sounds (V)	Simple Salt Water Alarm
Voice Light Diode	Electronic Bombing Game	Ambulance Water Alarm
Voice Control	Quiet Zone Game	Ambulance Contact Alarm
Motor Space Sounds	Space War Music Combo	

SC100	**Snap Circuits Jr. Lab**	**$29.95**
SC100R	**Matching SC100 Training Program And Parts Organizer** *(Does not include SC100)*	**$39.95**

Snap Circuits 300

KIT

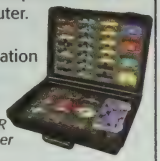
- ✔ Next level up from the Snap Circuits Jr!
- ✔ Contains Snap Circuits experiments 102-305!
- ✔ Contains over 60 individual parts and components!
- ✔ Advanced training program & organizer available
- ✔ Deluxe computer interfaced version available with 20 additional computer interfaced experiments

Step Up To The Next Level with Hundreds Of New Experiments!

The Snap Circuits 300 lab is the next step up from the SC100. Just like the Snap Circuits Jr. they are easy to build, troubleshoot and test without the use of a soldering iron! Snap Circuits experiments number 102 through 305 are included in this lab with over 60 parts and components including wires, battery holders, antenna coils, LEDs, lamps, microphones, ICs, capacitors, resistors, high frequency ICs, transistors, variable resistors, variable caps, and more. The illustrated manual covers projects 102 through 305 in detail. There will be many nights of excitement with these new experiments!

In addition, a Deluxe version of the Snap Circuits 300 kit is available that contains a computer interface and an additional 20 detailed experiments that include computer interaction. This is a perfect introduction to computer interfaces and programs that can be controlled with a computer.

Like the Jr., a matching educational series training program is also available for the Snap Circuits 300 that provides an in-depth exploration of the electronic components included with the kit. This program includes a custom parts organizer box to identify and keep track of each "building block" part, as well as a comprehensive student and teacher guide.



SC300R Organizer

The Snap Circuits 300, includes the following projects, 102 through 305:

Batteries in Series	Darkness Announcer	Whiner	Changing Delay Time	Noise-Activated Burglar Alarm
Batteries in Parallel	Musical Motion Detector	Lower Pitch Whiner	Morse Code Generator	Motor-Activated Burglar Alarm
Spacey Fan	Radio Music Alarm	Hummer	LED Code Teacher	Light-Activated Burglar Alarm
Two-Transistor Light Alarm	Daylight Music Radio	Adjustable Metronome	Ghost Shriek Machine	Photoresistor Control
Light-Controlled Alarm	Night Music Radio	Quiet Flasher	LED & Speaker	Microphone Control
Automatic Street Lamp	Night Gun Radio	Hissing Foghorn	Dog Whistle	Pressure Alarm
Voice-Controlled Rays of Light	Radio Gun Alarm	Hissing & Clicking	Mind Reading Game	Power Microphone
Blowing Off the Electric Light	Daylight Gun Radio	Video Game Engine Sound	Enhanced Quiet Zone Game	LED Fan Rotation Indicator
Adjustable Tone Generator	Blow Off a Space War	Light Alarm	Capacitor Charge & Discharge	Space War Sounds with LED
Photosensitive Electronic Organ	Series Lamps	Brighter Light Alarm	Sound Wave Magic	Sound Mixer
Electronic Cicada	Parallel Lamps	Lazy Fan	Space War Amplifier	Sound Mixer Fan Driver
Light & Sounds	Fire Fan Symphony	Laser Light	Trombone	Electric Fan Stopped by Light
More Light & Sounds	Fire Fan Symphony (II)	Water Alarm	Race Car Engine	Motor & Lamp
More Light & Sounds (II)	Fan Symphony	Radio Announcer	Power Amplifier	Start-Stop Delay
More Light & Sounds (III)	Fan Symphony (II)	Pitch	Feedback Kazoo	Mail Notifying System
More Light & Sounds (IV)	Police Car Symphony	Pitch (II)	AM Radio	Mail Notifying Electronic Bell
Motor Speed Detector	Police Car Symphony (II)	Pitch (III)	Fire Engine Symphony	Mail Notifying Electronic Lamp
Old-Style Typewriter	Ambulance Symphony	Flooding Alarm	Fire Engine Symphony (II)	Twice-Amplified Oscillator
Space War Sounds	Ambulance Symphony (II)	Make Your Own Battery	Vibration or Sound Indicator	Quick Flicking LED
Space War Sounds Controlled by Light	Static Symphony	Make Your Own Battery (II)	Two-Finger Touch Lamp	AM Radio with Transistors
Space War Radio	Static Symphony (II)	Make Your Own Battery (III)	One-Finger Touch Lamp	AM Radio (II)
The Lie Detector	Capacitors in Series	Tone Generator	Space Battle	Music Amplifier
NPN Amplifier	Capacitors in Parallel	Tone Generator (II)	Space Battle (II)	Delayed Action Lamp
PNP Amplifier	Water Detector	Tone Generator (III)	Multi-Speed Light Fan	Delayed Action Fan
Sucking Fan	Salt Water Detector	Tone Generator (IV)	Light & Finger Light	Police Siren Amplifier
Blowing Fan	NPN Light Control	More Tone Generator	Storing Electricity	Lasting Doorbell
PNP Collector	NPN Dark Control	More Tone Generator (II)	Lamp Brightness Control	Lasting Clicking
PNP Emitter	PNP Light Control	More Tone Generator (III)	Electric Fan	Leaky Capacitor
NPN Collector	PNP Dark Control	Music Radio Station	Radio Music Burglar Alarm	Transistor Fading Siren
NPN Emitter	Red & Green Control	Alarm Radio Station	Light Dimmer	Fading Doorbell
NPN Collector - Motor	Current Controllers	Standard Transistor Circuit	Motion Detector	Blowing Space War Sounds
NPN Emitter - Motor	Current Equalizing	Motor & Lamp by Sound	Fan Modulator	Adjustable Time Delay Lamp
Buzzing in the Dark	Battery Polarity Tester	Fading Siren	Oscillator 0.5 - 30Hz	Adjustable Time Delay Fan
Touch Buzzer	Blow Off a Doorbell	Fast Fade Siren	Sound Pulse Oscillator	Adjustable Time Delay Lamp (II)
High Frequency Touch Buzzer	Blow Off a Candle	Laser Gun with Limited Shots	Motion Detector (II)	Adjustable Time Delay Fan (II)
High Frequency Water Buzzer	Blow On a Doorbell	Symphony of Sounds	Motor Rotation	Watch Light
Mosquito	Blow On a Candle	Symphony of Sounds (II)	Motor Delay Fan	Delayed Bedside Fan
High Sensitivity Voice Doorbell	Screaming Fan	Transistor Amplifiers	Motor Delay Fan (II)	
Louder Doorbell	Whining Fan	Pressure Meter	High Pitch Bell	
Very Loud Doorbell	Light Whining	Resistance Meter	Steamboat Whistle	
Doorbell with Button	More Light Whining Motor Than Won't Start	Auto-Off Night-Light	Steamship	
		Discharging Caps	Steamship Horn	

SC300	**Snap Circuits 300 Lab**	**$59.95**
SC300S	**Snap Circuits 300 Lab With Computer Interface And Experiments**	**$79.95**
SC300R	**Matching SC300 Training Program And Parts Organizer** *(Does not include SC300 or SC300S)*	**$99.95**

NEW!

Add FM Radio, Voice Recording And The Latest Technology To Your Experiments!!

KIT

Snap Circuits 500 Pro

- ✔ **Continue climbing to the next level!**
- ✔ **Contains Snap Circuits experiments 306-511!**
- ✔ **Contains over 75 individual parts and components!**
- ✔ **Advanced training program & organizer available**
- ✔ **Deluxe computer interfaced version available with 20 additional computer interfaced experiments**

The Snap Circuits 500 lab takes you into the high tech world of electronics! Just like the Snap Circuits Jr. they are easy to build, troubleshoot, and test without the use of a soldering iron! Snap Circuits experiments number 306 through 511 are included in this lab which includes over 75 parts and components including wires, battery holders, antenna coils, LEDs, 7 segment LED displays, lamps, microphones, ICs, capacitors, resistors, high frequency ICs, FM RF modules, analog meters, SCRs, relays, transformers, recording indicators, transistors, diodes, variable resistors, variable caps, and more. The illustrated manual covers projects 306 through 511 in detail. Just look through the advance projects included!

Similar to the SC300S, a Deluxe version of Snap Circuits 500 kit is available that contains a computer interface and an additional 73 bonus computer interfaced experiments. This is a perfect introduction to computer interfaces and programs that can be controlled with a computer.

Like the Jr. and the Snap Circuits 300, a matching educational series training program is also available for the Snap Circuits 500 that provides an in-depth exploration of the electronic components included with the kit. This program includes a custom parts organizer box to identify and keep track of each "building block" part, as well as a comprehensive student and teacher guide.

SC500R Organizer

The Snap Circuits 500, includes the following projects, 306 through 511:

AM Radio	Mosquito Sound (III)	Daytime Light Fire Engine	Time Delay	Automatic Display #0
Adjustable Volume FM Radio	Touch-Control Mosquito Sound	Daytime Light Ambulance	Manual 7 Second Timer (II)	Variable Oscillator
Playback & Record	Bulb & Relay	Flashing 8	15 Second Alarm	Variable Oscillator (II)
Playing Music	Relay Buzzer	Flashing 8 with Sound	Flashing "1 & 2"	Variable Oscillator (III)
Light-Controlled Music	Transistor Timer	Musical Space War	Flashing "3 & 4"	Variable Oscillator (IV)
Touch-Controlled Music	Light-Controlled Relay	Electronic Noisemaker	Flashing "5 & 6"	Photo Variable Resistor
Power Amplified Playing Music	Bulb Alert Relay	Electronic Noisemaker (II)	Flashing "7 & 8"	Variable Whistle Chip Oscillator
Power Playback & Record	Adjustable Light Control	Bee	Flashing "9 & 0"	Slow Adjusting Tone
Power Light-Controlled Music	Meter Deflection	Bee (II)	Flashing "b & c"	Slow Adjusting Tone (II)
Power Touch-Controlled Music	AC to DC Current	Bee (III)	Flashing "d & e"	Fixed-Current Path
FM Radio	Current Meter	Oscillator Sound	Flashing "h & o"	Simple Illumination Meter
Mega Circuit	Buzzer, Relay, & Transformer	Oscillator Sound (II)	Flashing "A & J"	LED Voltage Drop
SCR 2.5V Bulb	Buzzer & Relay	Oscillator Sound (III)	Alarm Timer	Open/Closed Door Indicator
SCR & Motor	Display Capital Letter "F"	Oscillator Sound (IV)	Alarm Timer (II)	Hand-Control Meter
Music Alarm	Display Capital Letter "H"	Oscillator Sound (V)	Alarm Timer (III)	Light-Control Meter
Light-Music Alarm	Display Capital Letter "P"	Transistor Tester	Bird Sounds	Electric-Control Meter
Light-Controlled SCR	Display Capital Letter "S"	Adjustable Voltage Divider	Bird Sounds (II)	Sound-Control Meter
3mA Meter	Display Capital Letter "U"	Automatic Display Capital Letter "C"	Bird Sounds (III)	Fixed-Voltage Divider
0-3V Meter	Display Capital Letter "C"	Automatic Display Capital Letter "E"	Bird Sounds (IV)	Resistor Measurement
Function of adjustable resistor	Display Capital Letter "E"	Automatic Display Capital Letter "F"	Bird Sounds (V)	Automatic Display Letter "b"
Function of Photoresistor	Display "."	Automatic Display Capital Letter "H"	Touch-Control Bird Sound	Automatic Display Letter "c"
Meter Deflect by Motor	Display Letter "b"	Automatic Display Capital Letter "P"	Motor Sound Recording	Automatic Display Letter "d"
SCR 6V Bulb	Display Letter "c"	Automatic Display Capital Letter "S"	Motor Sound Indicator	Automatic Display Letter "e"
Principle of Segment LED	Display Letter "d"	Automatic Display Capital Letter "U"	Relay & Buzzer	Automatic Display Letter "h"
Display #1	Display Letter "e"	Automatic Display Capital Letter "C"	Relay & Speaker	Automatic Display Letter "o"
Display #2	Display Letter "h"	Automatic Display Capital Letter "E"	Relay & Lamp	Hand-Control Display 1 & 4
Display #3	Display Letter "o"	Automatic Display Capital Letter "S"	Electronic Cat	Hand-Control Display 1 & 0
Display #4	Space War Alarm by SCR	Automatic Display Capital Letter "U"	Electronic Cat (II)	Hand-Control Display 1 & 7
Display #5	Light Space War Alarm	Automatic Display Capital Letter "L"	Electronic Cat (III)	Hand-Control Display 1 & 8
Display #6	Alarm by SCR	Whistle Chip Sounds	Electronic Cat (IV)	Hand-Control Display 1 & 9
Display #7	Light & Alarm IC	Whistle Chip Sounds (II)	Buzzer Cat	Monitor Capacitor Charging & Discharging
Display #8	Delay Light	Whistle Chip Sounds (III)	Buzzer Cat (II)	Hand-Control Space Meter
Display #9	Delay Fan	Whistle Chip Sounds (IV)	Buzzer Cat (III)	Rhythm Swinging Meter
Display #0	Delay Fan (II)	Whistle Chip Sounds (V)	Lazy Cat	Police Car Sound with Whistle Chip
Music Meter	Recording LED Indicator	Whistle Chip Sounds (VI)	Meter Deflection (II)	Fire Engine Sound with Whistle Chip
LED & Relay	Playback & Record with Meter	LED Music	Automatic Display #1	Ambulance Sound with Whistle Chip
Manual 7 Second Timer	Alarm Light	Light-Controlled LED Time Delay	Automatic Display #2	
Half Wave Rectifier Circuit	Alarm Light (II)	Touch-Controlled LED Time Delay	Automatic Display #3	
Half Wave Rectifier Circuit (II)	Night Police Car	Alarm Recorder	Automatic Display #4	
LED vs. Diode	Night Machine Gun	Alarm Recorder (II)	Automatic Display #5	
Current & Resistance	Night Fire Engine	Machine Gun Recorder	Automatic Display #6	
Telegraph	Night Ambulance	Time Delay 1-7 Seconds	Automatic Display #7	
Mosquito Sound	Daytime Light Police Car		Automatic Display #8	
Mosquito Sound (II)	Daytime Light Machine Gun		Automatic Display #9	

SC500	**Snap Circuits 500 Lab**	**$89.95**
SC500S	**Snap Circuits 300 Lab With Computer Interface And Experiments**	**$109.95**
SC500R	**Matching SC300 Training Program And Parts Organizer** *(Does not include SC500 or SC3500)*	**$149.95**

Snap Circuits 750 Extreme

KIT

- ✔ Go extreme with the Snap Circuits 750!
- ✔ Contains Snap Circuits experiments 512-692!
- ✔ Contains over 80 individual parts and components!
- ✔ Includes the Deluxe computer interface as well as over 70 computer interfaced experiments

Get The Best Of All Worlds With the Snap Circuits Extreme 750!

The Snap Circuits 750 Extreme takes you right there... to the Extreme! Just like the Snap Circuits Jr., Snap Circuits 300, and Snap Circuits 500, all the circuits are easy to build, troubleshoot and test without the use of a soldering iron!

Snap Circuits experiments number 512 through 692 are included in this lab which includes over 80 parts and components including wires, battery holders, solar cells, electromagnet iron core rod antenna, vibration switches, spring sockets, antenna coils, LEDs, 7 segment LED displays, lamps, microphones, ICs, capacitors, resistors, high frequency ICs, FM RF modules, analog meters, SCRs, relays, transformers, recording indicators, transistors, diodes, variable resistors, variable caps, and more.

The illustrated manual covers projects 512 through 692 in detail. Just look through the advance projects included! New experiments include solar, electromagnetism, and vibration switches.

Unlike the SC300 and SC500 the Snap Circuits 750 Extreme comes complete with the computer interface and 70 additional computer interface experiments that interactively work with your PC. It is not an option like the other versions.

The Snap Circuits 750 Extreme, includes the following projects, 512 through 692:

Siren	Solar Resistance Meter	Motor Sound with LED (II)	LED Flasher	Electromagnetism & Paperclips
Electronic Rain	Solar Diode Tester	AC & DC Current	LED Flasher with Sound	Electromagnet Suction
Leaky Faucet	Solar NPN Transistor Tester	Noisemaker	LED Flasher with Sound (II)	Electromagnet Tower
Lamp & Fan Independent	Solar PNP Transistor Tester	AC Voltage	Stepper Motor	Paperclip Compass
Drawing Resistors	Solar Cell vs. Battery	AC Voltage (II)	Crazy Music IC	Adjustable Paperclip
Electronic Kazoo	Solar Cell vs. Battery (II)	AC Voltage (III)	Stepper Motor w/ Sound	Suspension
Electronic Kazoo (II)	Solar Music	Noisemaker (II)	Stepper Motor w/ Light	Adjustable Paperclip w/ Delay
Water Resistor	Solar Sounds Combo	Noisemaker (III)	Police Siren with Display	Photoresistor Paperclip
Two-Transistor Oscillator	Solar Alarm	Pulsing Motor	Oscillator Alarm	Supension
Diode	Better Solar Alarm	Noisemaker (IV)	Oscillator Alarm (II)	Paperclip Oscillator
Rectifier	Photo Solar Alarm	Noisemaker (V)	Tapping U3	Paperclip Oscillator (II)
Motor Rectifier	Solar Space War	Noisemaker (VI)	Tapping U3 (II)	Paperclip Oscillator (III)
SCR Shutdown	Solar Music Alarm Combo	Noisemaker (VII)	Adjustable Beeper	Paperclip Oscillator (IV)
SCR Motor Control	Solar Music Space War Combo	Noisemaker (VIII)	Electronic Meow	Paperclip Oscillator (V)
Output Forms	Solar Music Space War Combo	Noisemaker (IX)	Electronic Meow (II)	Oscillating Compass
Transistor AM Radio	(II)	Alarm Power	Strobe Light	High Frequency Vibrator
Adjustable Solar Power Meter	Solar Periodic Lights	Alarm Power (II)	AND Gate	High Frequency Vibrator (II)
Fan Blade Storing Energy	Solar Periodic Lights (II)	Night Sounds	Nand Gate	Siren Paperclip Vibrator
Antenna Storing Energy	Solar AM Radio Transmitter	Mega Pulser and Flasher	OR Gate	Alarm Paperclip Vibrator
Electromagnet Storing Energy	Low Light Noisemaker	"E" & "S" Blinker	NOR Gate	Machine Gun Paperclip
Transformer Storing Energy	Low Light Noisemaker (II)	"2" & "3" Blinker	XOR Gate	Vibrator
Relay Storing Energy	Low Light Noisemaker (III)	"9" & "0" Blinker	High Pitch Oscillator	Alarm Vibrator w/ LED
Transformer Lights	Solar Oscillator	"3" & "6" Blinker	Low Pitch Oscillator	Alarm Vibrator w/ LED (II)
Machine Siren	Solar Oscillator (II)	"c" & "C" Blinker	Low Pitch Oscillator (II)	Relay-Whistle Vibrator
Hear the Motor	Daylight SCR Lamp	"O" & "o" Blinker	Low Pitch Oscillator (III)	Relay-Whistle Photo Vibrator
Back EMF	Solar Bird Sounds	"b" & "d" Blinker	Segment Jumper	Vibration LED
Back EMF (II)	Solar Bird Sounds (II)	"H" & "L" Blinker	DP & Zero Flasher	Vibration Speaker
Electronic Sound	SCR Solar Bomb Sounds	"A" & "o" Blinker	Stepper Motor with Lamp &	Measure the Vibration as You
Electronic Sound (II)	Flashing Laser LED's with	Open & Closed Indicator	LED's	Tap the Switch
Lighthouse	Sound	Open & Closed Indicator (II)	IC Start & Stop	Shaky Birthday Song
Diode Wonderland	U2 with Transistor Amplifier	Vibration Indicator	IC Motor Speed	Vibration Detector
Meter Ranges	U2 with Transistor Amplifier	Vibration Sounder	Sound & Light Flasher	Out of Balance
Motor Current	(II)	SCR Noise Circuit	Electromagnet Delayer	Vibration Alarm
2.5V Lamp Current	U1 with Transistor Amplifier	SCR & Transistor Switch	Electromagnet Delayer (II)	Vibration Space War
6V Lamp Current	Loud Sounds	Two-speed Motor	Two-Lamp Electromagnet	Vibration Light
Combined Lamp Circuits	Swinging Meter with Sound	Two-speed Motor (II)	Delayer	
Rechargeable Battery	Motor Sound Using	Current Flow	Electromagnet Current	
Solar Batteries	Transformer	AM Radio with Power LED's	Electromagnetism	
Solar Control	Motor Sound with LED	Space War IC Recording	Electromagnetism & Compass	

SC750 **Snap Circuits 750 Lab** **$119.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

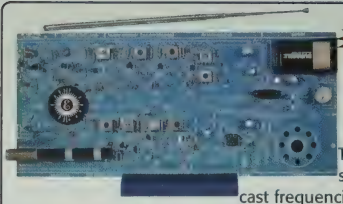
Learn AM and AM/FM Radios With Integrated Circuits!

Makes an excellent project for classroom studies, science fairs, home study!

The unique design of these kits allows you to place the part over its corresponding symbol in the schematic drawing on the surface of the PC board during assembly. This technique maximizes the learning process while keeping the chance of an assembly error at a minimum. They also feature the latest IC design technology to bring you up to speed with today's technology. These specific kits are available in both AM and AM/FM radios.

Both kits include an assembly, lesson, and theory of operation manual. The actual assembly is broken into simple sections. Each section is designed to be completely tested before moving on to the next; this reduces difficult troubleshooting associated with many similar kits. Both kits include hi-tech blue PC boards with the schematic printed on the top surface. The manuals are easy to understand without any previous electronics experience.

Each radio PC board has been designed so that no cabinet or enclosure is necessary. A special molded plastic base provides the necessary support to use the radio in any location, properly displaying the work achievement of the student or builder!

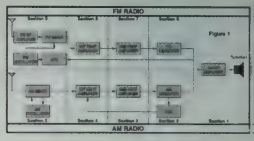


NEW!

AM/FM Integrated Circuit Radio & Training Course

Learn & Build A Superhet IC Based AM/FM Radio Receiver!

- ✔ Learn all about AM/FM radio design & theory!
- ✔ Build a high performance radio with an IC!
- ✔ Step-by-step assembly and test procedures
- ✔ Great for student projects



This Superhet 108 AM/FM Radio Kit is a "superheterodyne" receiver of the standard AM (amplitude modulation) and FM (frequency modulation) broadcast frequencies. The unique design of the Superhet 108 includes an integrated circuit (IC), 9 transistors, 4 diodes, and other related resistors, capacitors, coils, and misc. parts. Because good soldering practices are important, a soldering guide is also provided as well as a component color code and pictorial identification chart.

The actual assembly is broken down into 9 sections. The theory of operation for each section, or stage, should be read before the assembly is started. This will provide the student with an understanding of what that stage has been designed to accomplish, and how it actually works. After each assembly you will be instructed to make certain tests and measurements to prove that each section is functioning properly. If a test fails to produce the proper results a troubleshooting guide is provided to help you correct the problem. After all of the stages have been built and tested a final alignment procedure is provided to peak the performance of the receiver and maximize the Superhet 108's reception capabilities. Runs on a standard 9VDC battery, not included. From Elenco.

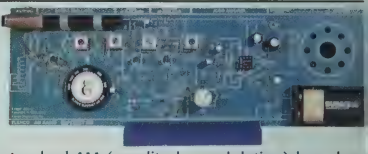
AMFM108K **AM/FM Integrated Circuit Radio Kit And Training Course** **$34.95**

AM Integrated Circuit Radio & Training Course

NEW!

- ✔ Learn all about AM radio theory and circuits!
- ✔ Build an IC based AM radio with great reception!
- ✔ Step-by-step assembly and test procedures
- ✔ Great IC starter kit for students young and old

AM Radio, Learn How It Works, And Build One Too!



This Superhet AM550 AM Radio Kit is a "superheterodyne" receiver of the standard AM (amplitude modulation) broadcas frequencies. Unlike the typical "cheap" AM radio kit, the AM550 features an integrated circuit design to bring you into today's technology of radio receivers. The high quality design includes a built-in integrated circuit (IC), 3 transistors, one diode, as well as resistors, capacitors, coils, The unique design of the Superhet 108 includes an integral integrated circuit (IC), 9 transistors, 4 diodes, and other related resistors, capacitors, coils, misc. parts and customer designed hardware. Before you even start building, construction techniques and soldering practices are illustrated and covered in detail. In addition a comprehensive parts list complete with a color code card is provided for rapid identification of all discrete parts.

The training course and assembly are broken down into 5 distinctive sections, allowing you to learn, build, and troubleshoot each section before advancing to the next section. Like the AMFM unit above, after each section you will be instructed to make certain tests and measurements to prove that each section is functioning properly. If a test fails to produce the proper results, a troubleshooting guide is provided to help you correct the problem. After all of the stages have been built and tested, a final alignment procedure is provided to peak the performance of the receiver and maximize the AM550's superb reception. Runs on a standard 9VDC battery, not included. From Elenco.

AM550K **AM Integrated Circuit Radio Kit & Training Course** **$22.95**

integrated circuit
Function: noun
A tiny complex of electronic components and their connections that is produced in or on a small slice of material such as silicon. *(More from the "need to know" department here at Ramsey!)*

High-Res Weatherproof "Lipstick" Cameras

Wired & Tested

- ✔ Three models: color Super EX-View, B&W hi-res, or B&W Super-HAD
- ✔ Small lipstick design
- ✔ Universal Swivel Mounting Bracket
- ✔ Weatherproof, Suitable for Outdoor Use!
- ✔ Simple Plug-In Connections

Welcome To The Super Resolution Department!

Looking for the highest quality "lipstick" or "bullet" cameras, but don't want to pay a fortune? These are the cameras for you! All feature Sony manufactured CCD sensors for the highest quality and reliability.

SPECIFICATIONS

	CCD340	CCD341	CCD342
Format:	NTSC Color	EIA B&W	EIA B&W
Pick-up element:	Sony 1/3" EX-View	Sony 1/3"	Sony 1/3" HAD
Number of pixels:	768x494	512x492	768-494
Resolution:	480 TV lines	420 TV lines	600 TV lines
Min. Illumination:	0.05 Lux	0.1 Lux	0.2 Lux
S/N ratio:	>50dB (AGC off)	>46dB (AGC off)	>48dB (AGC off)
Electronic shutter:	1/60 - 1/100,000	1/60 - 1/100,000	1/60 - 1/100,000
Impedance: 75 ohm	75 ohm	75 ohm	
Lens:	3.6mm	3.6mm	3.6mm
Connectors	BNC/Power	BNC/Power	BNC/Power
Power:	DC 12V/130mA	DC 12V/120mA	DC 12V/120mA
Dimensions:	3" L x 0.8 "H	3" L x 0.8 "H	3" L x 0.8 "H

A Sony EX-View color CCD sensor in the CCD340 provides the highest resolution and sensitivity available. Formerly only available in larger and much more expensive cameras, the EX-View is perfect when you want the finest picture quality possible. Great for medical coverage, precision inspection, or detailed surveillance use.

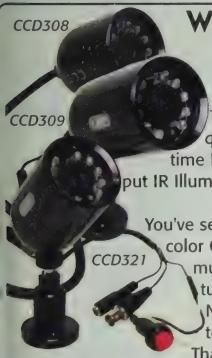
The standard B&W sensor in the CCD341 provides an above-average 420 lines of resolution. This is great for general purpose use and actually exceeds the resolution of the typical low cost black & white surveillance camera.

The CCD342 is a super-high resolution Black & White camera designed with a Sony CCD Super HAD sensor that provides 600 TV lines of resolution. This is perfect where exacting fine detail is required and color is not necessary. Yes, we said 600 lines!

All cameras feature a waterproof housing and a universal swivel mount. Video is brought out to a BNC female and power is brought out to a standard 2.1mm female connector. If you're looking for high quality and performance but don't want to pay a fortune, these are for you!

CCD340	**Color Super Hi-Res Lipstick Camera, EX-View CCD Sensor**	**$189.95**
CCD341	**B&W Hi-Res Lipstick Camera, Sony CCD Sensor**	**$69.95**
CCD342	**B&W Super Hi-Res Lipstick Camera, Sony Super-HAD Sensor**	**$99.95**
AC125	**110VAC Power Supply**	**$9.95**

Waterproof Color & B&W Bullet Cameras with Built-In IR Illumination!



Yes...We said COLOR Plus Automatic IR Illumination!

- ✔ Day & night monitoring! CCD color image automatically changed into B/W image in the dark!
- ✔ High output built-in IR illumination for B&W nighttime use
- ✔ Weatherproof black anodized aluminum housing for outdoor use
- ✔ Fool-proof interfaces...BNC video & power

Wired & Tested

Talk about the best of both worlds! High quality COLOR video camera, PLUS nighttime B&W video camera, PLUS built-in high output IR Illumination, PLUS auto mode switching...all in one unit!

You've seen bullet cameras before, but never like this. Yes, it's a high quality color CCD camera during the day. Once the light level falls below minimum requirements it automatically changes to an IR B&W camera, and turns on the built-in TEN IR illuminating LED's to see in the dark! Now you don't have to sacrifice color operation because you need total darkness coverage at night. You can have both, in one camera! That's not all! Just look at the case. Jet black solid aluminum case that's WATERPROOF to IP57 standards! Yes, that includes temporary complete immersion in water! All angle, built-in swivel mount provides you with any mounting configuration you may need. Connections are simple. No solder connections needed; the waterproof cable terminates video with a professional BNC female connector, and provides a standard 2.1mm DC power connector. Simply plug it in! It only gets better... Take the same camera and with a mere switch closure get 2X digital zoom! That's right, our CCD321 also includes 2X digital zoom, and we even provide a high quality pushbutton switch for it! You'll be amazed; set up the camera for your wide angle view and with a flip of the switch you have 2X! And you do that at the cable end, not at the camera! Don't need color but want the same high-end housing and built-in IR Illumination in a Hi Resolution B&W unit? No problem, use the CCD308 *(I set one of these up for our webcam, pushed the button, and saw one of our people sleeping at the bench...and it wasn't even Friday..or Monday!)*

SPECIFICATIONS

	CCD309	CCD308
Pick-up element:	1/4"	Sony 1/3"
Number of pixels:	512 x 492	542 x 492
Resolution:	350 TV lines	420 TV lines
Min. illumination:	0.0 Lux	0.0 Lux
S/N ratio:	46dB	46dB
Electronic shutter:	1/60 to 1/100,000	1/60 to 1/100,000
Load Impedance:	75 ohm	75 ohm
Standard board lens:	3.6mm, F2.0	6mm F1.8
Power:	DC 12V 150mA	DC 12V 180mA
Dimensions:	2.0" W x 3.2" L	2.0" W x 3.2" L

CCD309	**Waterproof Color Bullet Camera with Built-in Auto Switching IR Illumination**	**$169.95**
CCD308	**Waterproof B&W Bullet Camera with Built-in Auto Switching IR Illumination**	**$109.95**
CCD321	**Waterproof Color Bullet Camera with Built-in Auto Switching IR Illumination, 2X Remote Zoom**	**$239.95**
AC125	**110VAC Power Supply**	**$9.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

Wired & Tested

The Cubes! World's Smallest Video Transmitters

The Size Of A Quarter? You Bet!

- ✔ Crystal clear transmission
- ✔ Transmits on CATV channel 59
- ✔ Ultra small for ANY application!

Perfect video transmission from a transmitter you can hide under a quarter and only as thick as a stack of four pennies! Transmits color or B&W with fantastic quality - almost like a direct wire connection to any TV tuned to cable channel 59. Crystal controlled for no frequency drift with performance that equals law enforcement models that cost hundreds more!

Basic 20 mW model transmits up to 300' while the high power 100 mW unit goes up to 1/8 mile. Units run on 9 volts and hook up easily to most any CCD camera module. Any of our camera modules have been tested to mate perfectly with the Cubes and work great with solid, trouble-free operation! Fully assembled and tested - just hook-up power and you're on-the-air with a killer system! *(These new quarters are ugly & take bad pictures!)*

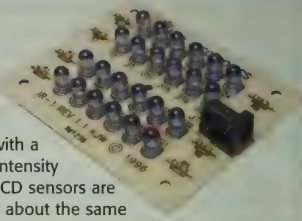
C2000	**Cube Video Transmitter, Factory Assembled & Tested**	**$49.95**
C2001	**High Power Cube Video Transmitter, Factory Assembled & Tested**	**$79.95**

Infrared Illuminator

KIT

- ✔ Allows you to "See In The Dark"!
- ✔ Amazing illumination!
- ✔ Works with B&W CCD camera
- ✔ Operates on 12VDC

Don't Let Darkness Dim Your View!



Imagine being able to see in total darkness! Well, while you can't, virtually any black & white CCD camera can...with a little help from some invisible infrared light! It's easy with our IR1 Infrared Illuminator! A huge array of 24 high intensity infrared LEDs illuminate a good size area so the camera "thinks" it's daylight! There's nothing magical about it; CCD sensors are sensitive to IR light that you can't see, so to the camera the area seems lit perfectly! The illumination provided is about the same as you would expect from a very bright wide beam flashlight.

The illuminator runs on 12-15VDC and is built on a convenient PCB ready to install wherever you need it. Because the light is invisible to the human eye, the kit will not be detected, and can be easily disguised! Order our AC125 power adapter for a simple plug-in connection.

IR1	**IR Illuminator Kit**	**$29.95**
AC125	**110VAC Power Supply**	**$9.95**

KIT

Automatic Sequential Video Switcher

Don't Miss A Beat... Watch 4 Cameras At Once!

- ✔ Automatic Switching of 4 Video Sources
- ✔ Variable Speed
- ✔ Manual Camera Selection

Now you can monitor up to four video cameras or other video sources on one video monitor. The AVS10 will automatically sequentially switch between inputs one through four, and display the output on a video monitor. Perfect for multiple video camera installations, stores, household surveillance systems, and more. Has (4) RCA inputs for video input, and one RCA output connector, so you can use standard consumer video cables. Variable front panel timing control allows you to change the viewing time for each sequential view. Change it from fast to slow depending on your requirements! If you see a view you need to study you can manually select that input for constant monitoring. Case measures 5"W x 1½"H x 5¼"D. *(If you don't want to build it, see the next page for Quad split units!)*

AVS10C	**Automatic Video Sequencer Kit With Case**	**$44.95**
AC125	**110VAC Power Supply**	**$9.95**

VHF TV Transmitter

KIT

- ✔ Transmits on Channel 2-6
- ✔ Broadcast your VCR Throughout Your House
- ✔ Learn While Building!

Learn How A TV Transmitter Works!

This great little kit allows you to send any audio and video source (like a VCR or TV camera) to any TV set for up to 300 feet. Have your own TV station with YOU playing producer and YOUR selection of programming! And, the nice feature of this kit is that you'll learn just how a TV transmitter works; we explain every part of the circuit from A to Z.

Tunable to any TV channel 2 - 6, runs on 12 VDC, and accepts standard audio and video signals. Includes an attractive custom case for a finished look!

TV6C	**VHF TV Transmitter Kit With Case**	**$39.95**
AC125	**110VAC Power Supply**	**$9.95**

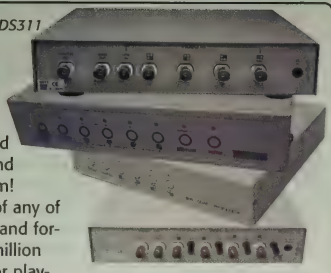
Color and B&W Quad/Sequential Switchers

Wired & Tested

- ✔ Full Motion Quad Display
- ✔ Automatic Sequential Switching
- ✔ Professional Quality at a Bargain Price!

Full Motion Quad Display & Switching... Color or Black & White!

CCDS311



CCDS310

This color, professional quad processor/switch really amazed us! It's simple to set up, but has all the power and features you'd expect from units costing hundreds more. Plug in up to four color cameras or video sources, and watch them displayed in FULL MOTION, in color, on one screen! Not sure which camera is which? No problem! Camera ID text generators name each camera view, plus the time! Want more? Has one touch freeze frame of any of the inputs, auto freeze and alarm at loss of signal, on-screen user menu provides all setup, ID generator, level and format functions. Plus independent title settings, 8 characters per channel with 3 character colors based on 16 million true colors, built-in bar generator for monitor setup, and VCR in to support 2x2 Zoom-In and freeze function for playback. It doesn't get much better than that!

Does all this overwhelm you when all you need is a high quality monochrome quad/sequential switcher? We've got you covered there too! Our CCDS310 is similar to the color switcher above, but without all the bells and whistles. Made specifically for monochrome CCTV cameras or video sources, it provides the same quad display of up to four sources. Manual pushbutton full screen selection of any input, quad display, or sequential display are all controlled from the front panel. Each input has separate video gain adjustments to set levels for a perfect view. Both units feature professional BNC video input connections.

CCDS311	**Professional Color Quad/Sequential Switcher**	**$269.95**
CCDS310	**Professional B&W Quad/Sequential Switcher**	**$119.95**

Color Time Lapse With Audio & Control Outputs!

Wired & Tested

960 Hour Time Lapse VCR

- ✔ 24 Hours real-time recording!
- ✔ 1280 Hours time lapse recording (with T-160 tape)
- ✔ DLC drum for increased head life
- ✔ Records audio as well as video (in 2, 6, 18 & 24 Hr modes)
- ✔ IR remote, self diagnosis, menu driven

Finally, time lapse recording made affordable for everyone, and without sacrificing a bit of quality! Standard VHS tapes are used in our CCT960. And get ready for this one...on a standard T-120 tape you can record up to 960 hours of video! Use a T-160 tape and you can record a whopping 1280 hours on one tape! And you can play those back in the standard 120 or 160 minute modes! Things may tend to move a tad bit quickly though! No problem; you can slow down the playback to the corresponding record time for real time images.

And it gets better! The CCT960 even records audio in the continuous modes. That's right, you can have up to 24 hours of color video and audio time lapse recording on one T160 tape! This is not a modified VHS VCR, but one made from the ground up for time lapse and security use. Heavy duty 4 Head DLC drum gives you increased head life for the continuous duty operations normally used with these units. On-screen menus provide full control and setup functions, and are accessed by the IR remote control included. You can program timed start and stop recording, or external alarm input recording.

Hours T-120	Hours T-160	Record Fields/Sec	Record Interval	Audio Recording	Tape Motion
2 (SP)	2.67	1/60 Sec.	60	Yes	Continuous
6 (EP)	8	3/60 Sec.	60	Yes	Continuous
18 (EP)	24	3/60 Sec.	20	Yes	Continuous
24 (SP)	32	0.22	5	Yes	Continuous
36 (SP)	48	0.32	3.33	No	Intermittent
48 (SP)	64	0.42	2.50	No	Intermittent
72 (SP)	96	0.62	1.6	No	Intermittent
96 (SP)	128	0.82	1.25	No	Intermittent
120 (SP)	160	1.02	1	No	Intermittent
168 (SP)	224	1.42	0.71	No	Intermittent
240 (SP)	320	2.02	0.5	No	Intermittent
360 (SP)	480	3.02	0.33	No	Intermittent
480 (SP)	640	4.02	0.25	No	Intermittent
720 (SP)	960	6.02	0.17	No	Intermittent
960 (SP)	1280	8.02	0.13	No	Intermittent

We've got one of these running on our webcam in the 960 hour mode, and it's incredible how fast we get stuff done! *(Or does it take us 960 hours to do something that should take 2!)*

SPECIFICATIONS	
Recording	
Recording method	Dual-azimuth 4-head rotating helical scanning system
Audio recording	In 2, 6, 18 and 24 hour modes
Tape speed	33.35m/sec (2 hour mode)
Specified video cassette tape	VHS 1/2 inch video cassette tape
Recording/playback time	2/6/18/24/36/48/72/96/120/168/240/360/480/720/960 hours (when using T-120 tape)
Fast forward/rewind time	Within 3 minutes (when using T-120 tape)
Television system	NTSC color TV system
Video	
Recording method	Luminance signal: FM recording ~0.8V Down-converted subcarrier phase shift system
Video input	1 Vp-p, BNC, 75 ohm, unbalanced
Video output	1 Vp-p, BNC, 75 ohm, unbalanced
Horizontal resolution	Black & white mode, 300 lines; Color mode 250 lines
Audio	
Input	RCA pin jack more than 47k ohm -8.8dBm, unbalanced
Output	RCA pin jack less than 1.5k ohm -7.8dBm, unbalanced
Microphone input	-60 dBs, 3.5mm mini jack, 10k ohm, unbalanced
Connectors	
Alarm input	DC 4~5V(Open), DC 0~0.8V(Closed)/5.7k ohm
Alarm output	DC 4~5V(H), DC 0~0.8V(L)/5.7k ohm
Panic input	DC 4~5V(Open), DC 0~0.8V(Closed)/5.7k ohm
End output	DC 4~5V(H), DC 0~0.8V(L)/5.7k ohm
Warning output	DC 4~5V(H), DC 0~0.8V(L)/5,7k ohm
Series input	DC 4~5V(H), DC 0~0.8V(L)/5.7k ohm
Series output	DC 4~5V(H), DC 0~0.8V(L)/5.7k ohm
Switch output	DC 4~5V(H), DC 0~0.8V(L)/5.7k ohm
Common	OV(GND)
Other Specifications	
Operating temperature range	41°F - 104°F
Operating humidity range	80% or less
Power requirements	AC 90-240V~ , 60hz
Power consumption	17W
Dimensions	360(W) x 90(H) x 289(D)
Weight	approximately 4.3kg

CCT960	**960 Hour Color Time Lapse VCR, Factory Assembled & Tested**	**$399.95**

Infra-Red Thermometer

Wired & Tested

Ready, Aim... And Measure!

- ✔ Easy contact-free temperature measurement
- ✔ Momentary or continuous measurement
- ✔ Last measurement data hold/display
- ✔ Continuous capture of min/max values
- ✔ Large backlit LCD display

This beauty is one of the neatest thermometers we've ever seen! You can measure the temperature of anything merely by pointing an IR beam of light at it! That's right, no contact, no sensors, no wires, glass, nothing but a beam of IR light! Is your motor running hot? Is your refrigerator cold enough? How cold IS that bottle of soda? If you want to know, just aim and push the button. The temperature is immediately displayed on the backlit LCD display! Last measurement is automatically held and stored until power-off. Measurements can be momentary or continuous, with minimum and maximum temps held during measurement! You can't ask for much more than that in a handheld thermometer that is contact-free besides!

SPECIFICATIONS:	
Range:	-5°F to 575°F
Resolution:	0.1°F
Accuracy:	±4°F
Units:	°F or °C
Dist to measurement spot:	6:1
Ambient temp range:	32°F to 104°F
Emission factor:	0.95
Power supply:	4 x LR44 cells
Battery life:	2000 measurements approx.
Dimensions:	2.25" x 1" x 4"

How does it work, you ask? Well if you really want to know, when making a temperature measurement the surface radiation of the object to be measured is evaluated using the principle of radiation thermometry. This is a purely passive process, i.e. no radiation is transmitted. But instead only the natural electromagnetic radiation energy (heat radiation) that every body above a temperature of absolute zero (-273 °C) has, is used. The temperature can be determined very accurately from this radiation energy if the emission factor of the object being measured is known. We'll stop there, because we only have so much space for all this copy! Runs on 4 LR44 cells (included) for a long life. If you want to know what the temperature is, check it out with the IR101! *(The bartender didn't care when I told him my "ice cold beer" was 47.3° so I showed him...he still didn't care!)*

IR101 **Infra-Red Thermometer** **$49.95**

Power Cost Controller

Wired & Tested

- ✔ Cost monitoring and cost forecasting
- ✔ Just plug it in and you're all set!
- ✔ Stores data

Efficient & Easy Monitoring Of Electrical Consumption!

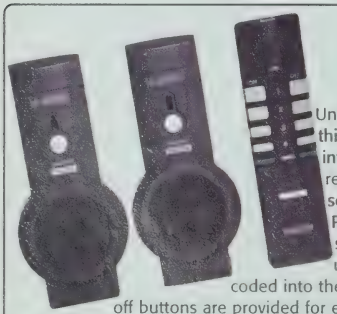
SPECIFICATIONS:	
Supply voltage:	120V ~ (60Hz)
Absolute max. loading rating:	1800W (15A)
Battery:	LR44, 1.5V Button Cell (included)
Accuracy:	±2W or ±2% whichever is greater

How many times have you wondered exactly how much it costs to keep something running? Well now you can easily find out! Plug the PCC120 into any standard 110VAC outlet, plug the device or devices into it, and instantaneously measure its consumption! It doesn't get much easier than that! Monitor energy usage and view cost of operation of any device. Check your refrigerator efficiency, compare incandescent vs fluorescent bulbs, and much more. Enter the energy costs into the unit and it will forecast operational cost on a daily, monthly and yearly basis! Displays power usage, current power consumption in watts, maximum load power in max watts, total energy consumption in total kilowatt hours, calculates cost of operation based on actual usage and kilowatt/hour cost, forecasts daily, monthly and yearly costs, and calculates the cumulative costs since startup or reset. An internal button cell powers the unit and stores data, making it non-dependent on AC power. *(I put one of these on one of the engineer's soldering irons to show him what it costs when he leaves it on EVERY NIGHT!)*

PCC120 **Power Cost Controller, Factory Assembled & Tested** **$39.95**

RF Remote Control System

Wired & Tested



Wireless Controls, Great For Holiday Lighting Displays!

- ✔ Uses 433 MHz RF for wireless control!
- ✔ 4 channel remote controls multiple remotes
- ✔ Master on/off controls all channels

SPECIFICATIONS:	
Operating voltage:	120V ~ (60Hz)
Maximum current:	30 amps
Maximum power:	3600 watts
Frequency:	433 MHz
Operational range:	80 feet approx.
Remote functions:	4 numbered keys, on/off
Security code:	4-digit
Remote power:	2 x AA batteries

Universal remote control doesn't get much easier than this! Plug the remote outlet in the wall. Plug the device into the remote outlet. Control the device with the RF remote control! The system operates with RF at 433 MHz so it doesn't have to have "line of site" like IR controls. Plus the remote has 4 selectable channels to control 4 separate functions. Each function can be from one to an unlimited number of remote outlets! The functions are coded into the remote with a 4-digit security code! Separate on and off buttons are provided for each channel. Plus, there is a master on/off that turns off ALL channels! The system comes with one 4-channe remote and two remote outlets. There are a variety of programming options. One remote can control a number of outlets, multiple remotes can contro the same outlets, or you can have any combination using 4 channels! Outlets are rated for indoor use. *(I use these for my holiday lights; it was a lot easier than finding the plugs each night!)*

RS204 **RF Remote Control Outlet System** **$39.95**

Personal Animated Badge

- ✔ Create your own graphic animations!
- ✔ 8 animations, 25 frame storage
- ✔ Adjustable speed and brightness

Limited To Your Imagination!

What an attention grabber! Create your own graphic animations to be displayed in full motion on this personal "badge"! 8 animations of 25 frames can be stored and selected for display. Adjustable speed and two brightness levels give your messages a custom look. Animates are drawn via the RS232 input with provided software. Includes RS232 cable, CD with edit software and samples. Runs on one 3VDC CR2032 battery (included) for more than 50 hours. Measures 3.1" x 1.9". Factory assembled & tested, ready to go! From Velleman.

VM112 Personal Animated Badge Wired & Tested **$49.95**

LED Flashing Flag Pin

- ✔ Proudly display the Stars & Stripes!
- ✔ 2 brilliant blue LEDs, 10 red LEDs
- ✔ Magnetic or pin attachment

Be Proud, And Show It!

Be a proud American and show your support with this neat little LED flashing pin! Factory assembled and tested and ready to pin on your shirt or jacket!

Subminiature circuit consists of 12 brilliant LEDs. Two high intensity blue LEDs accentuate the Stars while 10 more red LEDs proudly make the Stripes gleam! Truly a brilliant display of our flag. Can be pin or magnet attached. Measures 1" x 1". From Velleman.

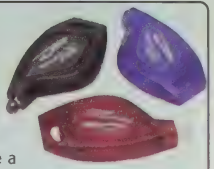
LFB10 LED Flashing Flag Pin Wired & Tested **$2.95**

High Power LED Key Lights

Wired & Tested

- ✔ Lifetime warranty
- ✔ Replaceable batteries
- ✔ Brighter than..bright!

The Highest Quality Security Light... With You ALL The Time!



The ultimate in convenience and safety! These tiny bright LED lights are smaller than a quarter, but brighter than most full size flashlights! Small enough for your key chain, these lights are great for dark parking lots, hallways, and anywhere you could use a superbright flashlight, but without the hassle of carrying one. With one of these on your key ring you'll always be able to see!

SPECIFICATIONS:	
Lamp:	High power LED
Batteries:	(2) Lithium cells (included)
Battery life:	12-14 hours
Beam angle:	20°
Weight:	7 grams with batteries

Unlike the imported cheapies out there that you see in stores, these feature replaceable batteries, superbright LEDs, have a lifetime warranty, and are made right here in the USA. They make great gifts, and even better stocking stuffers. Available in White for a brilliant beam of light, blue for a super penetrating beam of light, red for a subtle but bright illumination, and green for a soft, overall illumination. *(They also blind my boss when I flash the blue ones in his eyes...Blinded by the light, let's all sing!)*

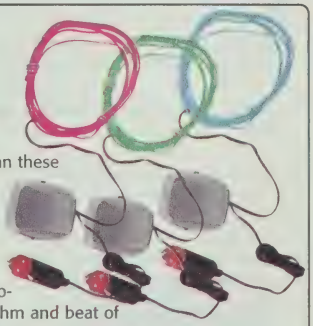
P1	**Ultra Bright Keychain Light, White**	**$9.95**
P2	**Ultra Bright Keychain Light, Green**	**$9.95**
P3	**Ultra Bright Keychain Light, Red**	**$9.95**
P4	**Ultra Bright Keychain Light, Blue**	**$9.95**

Sound Activated EL Illumination Wire Set

Wired & Tested

- ✔ Sound activated electroluminescent wire!
- ✔ Flashes to the rhythm of the music!
- ✔ Built-in microphone
- ✔ Adjustable sensitivity

Watch The Music... With Electroluminesence!



The category in the catalog is Neat Stuff! Well, I don't think anything is more deserving of being included here than these colored EL (Electroluminescent) wire sets! What you get is 9.8' of .13" EL wire in your choice of red, green, or blue. But that's just the start!

The EL wire is connected into a miniature (2" x 3" x 1") EL wire converter. Three switch selected modes on the inverter are FULL, MUSIC, and OFF. A continuous EL illumination is provided when selected to FULL. In the MUSIC mode, a built-in microphone picks up music from your car stereo and modulates the EL wire with the rhythm and beat of the music! There is even a slide control for sensitivity.

Designed for vehicle use, a standard 12V cigarette lighter plug is provided. Just plug it in, turn it on, and you're all set to "see" the music...nearly 10' of it! The thin design of the EL wire as well as the connecting wire make it easy to custom install it anywhere in your vehicle. Whether you're wrapping your dashboard, headliner, or console, it's a breeze with the EL wire set!

NWRR30	**Sound Activated EL Illumination Set, Red**	**$27.95**
NWRG30	**Sound Activated EL Illumination Set, Green**	**$27.95**
NWRB30	**Sound Activated EL Illumination Set, Blue**	**$27.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

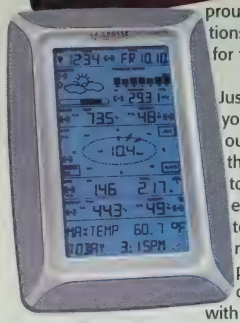
New For 2006

Wireless Professional Touch Screen Weather Stations

Professional Touch Screen Features... At A Hobbyist Price!

Wired & Tested

- ✔ The next generation in professional wireless weather stations!
- ✔ Large LCD touch screen display!
- ✔ Precision Swiss sensor!
- ✔ Records 1750 sets of weather data history!
- ✔ Wireless range up to 330 feet, or wired
- ✔ Computer/web interface



Professional home weather monitoring has not only become a favorite pastime for individuals and families but a necessity with all the recent storm activity. For several years we have offered some of the greatest values together with the highest performance in professional home weather stations. This year we are proud to announce the latest generation in professional weather stations that are affordable for not only the avid weather enthusiast but for the casual weather observer as well!

Just check the specs of the new 3600 series weather stations and you will be amazed. The large LCD screen displays all the continuous data in a bright, easy to read format. But it doesn't stop there. The entire screen is an active Touch Screen that responds to the slightest touch to select various functions and recall weather data memories! No more confusing buttons or menus; just touch the screen in the area of interest and the data will respond! Minimum and/or maximum indoor and outdoor temperatures, humidity, dew point, wind speed and direction, wind chill, rainfall, and more are automatically recorded complete with a time stamp for easy recall! Previous 72 hour barometric pressure graph is recorded and displayed in either inHg or hPa. Barometric tendency arrows are readable from across the room for an immediate indication of pending weather.

SPECIFICATIONS

- ✓ Large LCD Touch Screen display activates with the slightest touch
- ✓ Records 1750 sets of weather data history with included software
- ✓ Upload weather data to your PC with simple COM port connections
- ✓ Rainfall Data in inches or millimeters in 1 hour & 24 hours
- ✓ Records Max Rainfall with time and date stamp
- ✓ Wind direction with LCD compass
- ✓ Wind speed in mph, km/h, m/s, knots, or Beaufort
- ✓ Wind chill in °F or °C
- ✓ Records Min and Max wind chill with time and date stamp
- ✓ Records Max wind speed with time and date stamp
- ✓ Barometric Pressure with 72 hour history graph in inHg or hPa
- ✓ Barometric Pressure tendency arrows
- ✓ Multiple weather alarms
- ✓ Forecast barometric pressure icons
- ✓ Dew Point in °F or °C
- ✓ Records Min and Max Dew Point with time and date stamp
- ✓ Outdoor humidity in percent RH
- ✓ Indoor humidity in percent RH
- ✓ Records Min and Max humidity with time and date stamp
- ✓ Outdoor temperature in °F or °C
- ✓ Indoor temperature in °F or °C
- ✓ Records Min and Max temperature with time and date stamp
- ✓ Atomic Clock to WWVB with manual bypass setting
- ✓ Automatic daylight savings time on/off
- ✓ Perpetual calendar
- ✓ Time zone setting
- ✓ Time alarm
- ✓ Electroluminescent display backlight
- ✓ Swiss Precision Sensors
- ✓ Wall mount or desk mount
- ✓ Wireless 433MHz sensors or wired connection

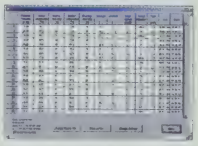
Swiss precision sensors are used for the ultimate accuracy and reliability. Data from the sensors can be transmitted back to your main weather station via your choice of wireless data at 433MHz or wired. Wireless transmission range can be up to 330' to give you the maximum adaptability in your installation. Plus, if you exceed this range or experience RF interference you can wire your sensors directly to your weather station with a single connection cable. The sensors provided include a Thermo-Hydro Sensor (also the 433MHz transmitter), a highly accurate Rain Sensor, and a precision Wind Sensor.

The current time-of-day is provided by the built-in Atomic Clock that is synchronized to WWVB for accuracy to the second! This applies to both time-of-day and time/date stamped weather information.

In addition to the Touch Screen LCD display all collected time and weather data can be transferred to a PC via a built-in RS232 connection. Windows software is included to provide complete sets of history data, data graphing, and automatic website integration!

The entire Professional Weather Station runs on a provided 110VAC power adapter as well as three standard AA Alkaline batteries for backup. The Thermo-Hydro sensor/transmitter runs on 2 standard C Alkaline batteries that provide a typical life cycle of 2.5 years! The sensor is also powered directly from the Weather Station when hard-wired together! If you're serious about weather and if you're looking for the ultimate reliability and accuracy beyond those blister packed, feature-lacking weather stations, the WS3600 series is for you. The main Weather Station measures 8.86" x 6.10" x 1.38". Available in an attractive Cherry/Gold or Gray Textured/Aluminum finish.

Included PC Software Screen Display



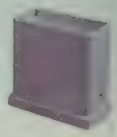
History Data File Screen Display

Software Publisher for site/web/email screen display

Thermo-Hydro Sensor/Transmitter

Wind Sensor

Rain Sensor



Check Out Our Live Weather At www.ramseykits.com!

WS3610CH	**Wireless Professional Weather Station With All Sensors And PC Software, Cherry/Gold**	**$329.95**
WS3610SAL	**Wireless Professional Weather Station With All Sensors And PC Software, Gray/Aluminum**	**$329.95**

WWV "Atomic" Clocks With Indoor/Outdoor Temperature

NEW!

- ✔ WWVB time standard with transmission check!
- ✔ Latest generation for 2006 and beyond
- ✔ Wireless outdoor remote temperature sensor & display
- ✔ Wall or desk mount, Aluminum, Cherry, or Oak finish
- ✔ Precision Swiss Sensor for highest accuracy and reliability

To The Second...
To The Degree...
Inside And Out!

Wired & Tested

SPECIFICATIONS	
Time:	Radio controlled, hour, minute, second, 12/24 hour
Time Zones:	GMT to -12GMT, all US time zones with zone indicator
Date:	Radio controlled month, date, year, day
Alarm:	Time, with snooze
Indoor Temp:	32°F to 122°F, 0°C to 50°C
Remote Temp:	-21.8°F to 156.2°F, -29°C to 69°C
Temp Accuracy:	±1.5°F
Weather Forecast:	Weather icons with tendency indicator 12.24 hour
Language:	Day display in English, French, Spanish, or German
Remote Transmitter:	Swiss Precision, 433.92 MHz TX6U transmitter
Wireless Range:	Up to 330' range
Power Requirements:	Clock 2 AA batteries (not included) Remote Transmitter 2 AA batteries (not included)
Mounting:	Wall or free standing desk/table
Dimensions:	8" x 12.2" x 1.18"

Well, where do we start this conversation? Years ago amateur radio operators and broadcasters used to utilize signals from WWV or WWVB to synchronize their clocks to the exact world time. Call it what you wanted, Universal Coordinated Time, GMT, Universal Standard Time, bottom line is that it was exact to the second...no matter where you were located!

Today the need is still there, but for a lot of different reasons! From on-line auction timing to contest timing, people need to know exactly what time it is! And beyond all those real reasons there is the simple fact that we all want to be accurate so that, at worst, we don't miss the next episode of CSI!

These latest generation of "Atomic Clocks" synchronize themselves to the WWVB time transmissions sent out 24/7. Time is provided in all possible time zones plus GMT ± time zones for your custom application. We've only just begun with the advanced features of these clocks!

They also feature both inside and outside temperature in your choice of °F or °C. Remote temperature sensing is received via a wireless temperature sensor which operates at 433.92 MHz with a typical range up to 330 feet! Just place your outdoor sensor in a suitable location away from the direct sunlight and you are all set. It gets even better! Based on barometric pressure, weather forecast icons are displayed showing you the upcoming weather trends. You can't ask for much more than exact WWVB controlled "Atomic Time" in 12 or 24 our format, exact inside and outdoor temperature in °F or ° C, and weather forecast trends based on barometric pressure. Sure you could... the display can be configured for not only English, but French, Spanish or German! And if all that isn't enough, the clocks all feature a built-in time alarm with snooze! The clocks come in attractive Aluminum, Cherry, or Oak finish, and measure 8" x 12.2" x 1.18". Order yours today and be on time tomorrow! *(I have one in my office; now I know exactly how 'way too late' I'm working!)*

WS8157UA	**Atomic Clock With Indoor/Outdoor Temperature, Brushed Aluminum**	**$59.95**
WS8157UC	**Atomic Clock With Indoor/Outdoor Temperature, Polished Cherry**	**$59.95**
WS8157UO	**Atomic Clock With Indoor/Outdoor Temperature, Polished Oak**	**$59.95**

Wireless Weather & Atomic Projector Clock

NEW!

Wake Up To The Exact Time & Weather!

- ✔ Projects temp & time on ceiling!
- ✔ Wireless weather plus "Atomic" time

Our previous "Atomic Projector Alarm Clocks" became extremely popular over the past year. The most common questions... how about more weather station features while still keeping the ceiling projection and alarm features? Well, consider it done!

This is truly the best of both worlds! You have a precision weather station on your nightstand, providing you highly accurate and reliable indoor and outdoor temperature and humidity as well as forecast trends in a nicely backlight display. But wait, it gets better! Projected on the ceiling is the current time as well as the outdoor temperature. Of course the time is accurate to the second because it is "Atomic" based on WWBV time standards.

Now you can easily see the time and the current outside temperature without even turning over in bed! Dual Crescendo alarms with snooze nicely wake you up and give you a couple second chances before you have to get up! The perfect mix of an "Atomic Clock", a wireless weather station, and a full featured alarm clock with ceiling projection. It doesn't get much better than this!

SPECIFICATIONS
✓ Barometric Pressure forecast graphic display
✓ Wireless outdoor and indoor humidity in percent RH
✓ Wireless outdoor temperature in °F or °C
✓ Indoor temperature in °F or °C
✓ Records Min and Max temperature with time and date stamp
✓ Records Min and Max humidity with time and date stamp
✓ Displays indoor comfort level graphic
✓ Displays moon phase with tide indicator
✓ Projects time and outdoor temperature on ceiling
✓ WWVB Atomic Clock for ultimate accuracy, 12/24 hour formats
✓ Perpetual calendar
✓ Time zone selection and maps
✓ Dual Crescendo alarms with adjustable snooze
✓ LED display backlight
✓ Accepts up to three separate outdoor sensors
✓ Swiss Precision Sensor
✓ Free standing ideal for nightstand
✓ Display runs on 3 standard AA Alkaline batteries, sensor uses two
✓ 110VAC power supply included
✓ Measures 7.25" x 4" x 2.5"

WS9031U **Wireless Weather & Atomic Projector Clock** Wired & Tested **$99.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295

Handheld Wind Speed Anemometer

Wired & Tested

NEW!

- ✔ Displays instantaneous wind speed!
- ✔ Stores and records max gusts and averages!
- ✔ Displays temperature and wind chill!

No More Guessing... KNOW The Wind Speed!

SPECIFICATIONS

- ✓ Displays wind speed in mph, km/h, m/s, and knots
- ✓ Wind speed range: 0.44 to 67.0 mph
- ✓ Wind speed resolution: 0.1 for all units of measure
- ✓ Temperature range -21.8 to 138.2 °F (-29.9 to 59 °C)
- ✓ Temperature resolution: 0.2°F (0.1°C)
- ✓ Records and displays max and average wind speed since power up
- ✓ Beaufort scale bar graph, 0-12
- ✓ Wind chill display in °F or °C
- ✓ Backlight with auto off
- ✓ Battery saving auto off
- ✓ Neck band for easy carrying and security
- ✓ Weather resistant case
- ✓ Runs on one CR2032 lithium button cell for 12 months life
- ✓ Measures 7" x 4" x 1.63"

We have all seen them on TV... the professional weather talent (now known as meteorologists!) standing in the middle of the hurricane report holding up their wind meter clocking the fastest wind gusts. Usually that's just before they get blown to the ground along with their producer and camera crew! Well now you can have the same professional wind speed meter on a hobbyist budget!

This doesn't just stop at the current wind speed however. Besides displaying the realtime instantaneous wind speed in your choice of MPH, KM/H, M/S, or Knots, it also stores and records the maximum gust AND average since it was powered up! In addition, realtime wind speed is also displayed on a Beaufort wind scale ranging between 0 and 12.

Like the wind speed, realtime temperature is also displayed in your choice of °F or °C. Plus, as a derivative of wind speed and realtime temperature, wind chill is calculated and also displayed in your choice of °F or °C.

For your convience the anemometer is housed in a rugged, weather resistant housing and includes a neck strap for easy carrying. The built-in battery saver circuit keeps the anemometer running for nearly a near with a single lithium button cell! Whether in the middle of a storm, on your boat, hiking, or just curious, if you're looking for the most convenient method of measuring the wind and temperature out in the field, the EA3010 is your answer.

EA3010 **Handheld Wind Speed Anemometer** **$49.95**

WWVB "Atomic" Wristwatches

Wired & Tested

Never Set Your Watch... EVER AGAIN!

NEW!

- ✔ Day, date, month, and time to the second!
- ✔ WWVB transmission checking
- ✔ Water resistant
- ✔ Lithium battery included

RSAW10R *RSAW10L* *RSAW10B* *RSAW10W* *RSAW10M*

Sill the latest craze in wristwatches "Atomic" time standards are synchronized with WWVB radio signals to provide the exact time to the second! You will never have to set your watch again, and you will never have to worry about being late! Originally very popular with amateur radio operators, TV and Radio broadcasters that live by exact time, these watches have become priced right for just about everybody! All timepieces feature a subminiature WWVB receiver and a precision quartz multifunction watch movement that include time, day, date, and month.

24 different time zones are supported as well as the standard US time zones including ATL, EST, CST, MST, PST, ALA and HAW. A built-in signal reception indicator shows when you are receiving WWVB and therefore your watch is synchronized. Time/date/date settings may also be manually set bypassing the automatic settings.

New for 2006 is the RSAW10M which has a streamlined stainless look with a slightly larger LCD display window. As shown, the curved silver banded matches the curves of the watch and is a great looking addition to our popular line of Atomic Watches.

Each watch is powered by one standard 3V CR1620 lithium battery that is included that provides approximately three years of operation. The battery is easily replaced. Watches are available in a variety of styles, colors, and straps to match your style. Get your "Atomic Watch" today and tell everybody else exactly what the REAL time is!

RSAW10R	**Digital Multifunction Atomic Wristwatch, Black Sport, Rubber Band**	**$49.95**
RSAW10L	**Digital Multifunction Atomic Wristwatch, Black Dress, Leather Band**	**$49.95**
RSAW10B	**Digital Multifunction Atomic Wristwatch, Black, Black Metal Band**	**$59.95**
RSAW10W	**Digital Multifunction Atomic Wristwatch, Silver, Silver Metal Band**	**$59.95**
RSAW10M	**Digital Multifunction Atomic Wristwatch, Larger Diplay, Silver, Silver Metal Band**	**$49.95**

Clock & Watch Models Are Updated Frequently, Check For The Latest At

www.ramseykits.com

Audio/RF DDS Signal Generator

Wired & Tested

- ✔ DDS and SMT technology!
- ✔ Frequency range 0 Hz to 5 MHz with 0.1Hz resolution!
- ✔ 0 to 10V peak to peak output level
- ✔ Sine, Square, or Triangle waveform output!
- ✔ Non-volatile memory
- ✔ Factory assembled and tested

DC To 5 MHz... In 0.1 Hz Steps!

SPECIFICATIONS	
Frequency Range:	0.0 Hz to 5 MHz
Frequency Resolution:	0.1 Hz
Stability:	±15 ppm
Output Amplitude:	0 to 10 Vp-p
Amplitude Resolution:	10 mV
Amplitude Accuracy:	±0.1 dB from 0 to 3 MHz +0.1 to -1.5 dB from 3 to 5 MHz
Output Waveforms:	Sine, Square, Triangle
Output Impedance:	50 ohm, 25 ohm, 0 ohm (current limited) internally selectable
DC Offset:	0.0 V to 5.0 VDC
Offset Resolution:	10 mV
Display:	High contrast LCD
Entry Method:	Direct entry numeric keypad, incremental rotary encoder
Memory:	6 non-volatile memory locations
Power Requirements:	8 to 16 VDC @ 600mA max. 110VAC power adapter included
Dimensions:	9.625" W x 3.625" H x 5.875" D 244.4mm W x 92mm H x 149.2 mm D

The SG560 is more than an audio generator. It is also a signal generator that produces AC signals with DC coupling at the output jacks like a digital signal generator. The versatility of the SG560 will allow you to recreate many basic signals used in testing situations.

The SG560 allows you to generate square waves, sine waves, and triangle waves of any frequency from 0 Hz to 5 MHz in 0.1 MHz steps. The frequency accuracy is tied to a crystal reference with an accuracy of ±15ppm over its full temperature range.

You can also step the frequency at any arbitrary increment. For example a step of 37.5kHz can be entered and the dial or shift arrows can be used to step the frequency up and down by this amount.

The SG560 uses a robust output stage for the final driver. It is derived from DSL modems and is essentially a high power opamp. The opamp is capable of delivering 2.5W to a load before going into protective shutdown. It is being used in a differential fashion which means that any common mode noise is cancelled on the output. The output voltage can swing from 10V peak to peak with a 5V DC offset without clipping. For a negative DC voltage output, swap the polarity of the cables attached to the jacks.

The SG560 allows digital entry of the output level with a resolution of 10mV. For example if you enter 5.55V, the SG560 will generate a 5.55V peak to peak waveform at the jacks. The SG560 has an additional option which allows the user to set the output impedance. It can be 50 ohms, 25 ohms, or or 0 ohms impedance at the output jacks. With a 50 ohm output impedance a 50 ohm load will drop the output signal level by ½ of the value entered. With 0 ohms a 50 ohm load will not drop the level at all. The 25 ohm output setting can help when driving a capacitive load; the 0 ohm setting should never be used with this type of load.

A DC offset may be entered; this is added (or subtracted if the jack connections are reversed) to the AC signal. Rather than the output AC waveform being centered on 0VDC, a set DC voltage can be added to your signal. This allows the performance of tests that are not possible with a basic audio signal generator. For example, a small circuit can be powered by the DC offset as long as it requires less than 2.5W of power, and AC signals can be used to check for noise or EMI immunity.

The DC offset can also be used to recreate digital signals in the square wave mode. For example, to create TTL square waves, enter 5V for the level, and 2.5V for the offset. This will create the 5V (digital '1') and the 0V (digital '0') levels needed for testing and clocking digital circuits. With a signal range of up to 10V peak to peak and 5V of offset, even old 4000 series CMOS signal levels can be recreated!

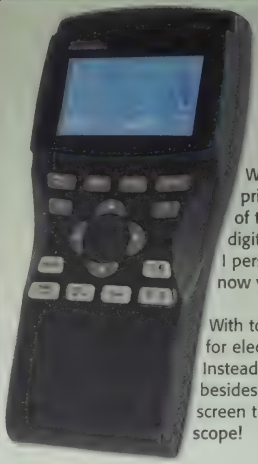
Additionally the SG560 contains 6 non-volatile memories which save the full system settings: frequency, level, shape, and offset. This allows you to frequency hop or use the memories to "script" repair, testing, and alignment procedures.

Surface mount technology is used throughout the SG560 making it extremely reliable and accurate. Frequency is entered directly on the sealed membrane keyboard and adjusted with a precision rotary encoder with an oversized knob. Both frequency and output level are displayed on a high contrast, two-line LCD display.

The SG560 operates on 8 to 16VDC and includes a standard 110VAC power adapter. Because of the surface mount design the SG560 is only available factory wired and tested. If you are looking for a lab quality signal generator at a super price, the new generation SG560 fits the bill... and a whole lot more!

SG560WT **Audio/RF Signal Generator, Factory Assembled & Tested** **$329.95**

Shop online at www.ramseykits.com
Call Toll Free 800-446-2295



Wired & Tested

Portable Digital Oscilloscope With DVM Readout

Your Own Personal Handheld Scope!

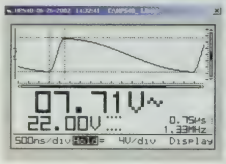
- ✔ Digital waveform & measurement display!
- ✔ 10 MHz & 40 MHz sample rates
- ✔ Backlit LCD display
- ✔ RS232 output (40 MHz model only)
- ✔ Charger and matching carrying case included

We've all seen different models of portable scopes, meters, and scope/meters. We've also seen the price tag! Unless you were a field tech with a good sized test equipment budget they were out of the question. These Velleman "Personal Scopes" have changed all that and put a handheld digital scope within reach of the hobbyist, student, and technician! As I'm writing this catalog copy, I personally remember when I shelled out a couple thousand dollars for my first Scope Meter! And now you can buy one of these for several hundred dollars...with more features besides!

With today's technology, merely measuring voltage isn't enough. Whether you're an auto mechanic looking for electrical noise, working with audio equipment, or a student working on lab projects, a scope is a must! Instead of carrying around a digital multimeter you can actually have your own personal scope at about the same price! And besides a scope the display has DVM readout for dBm, dBV, DC, and True RMS! Frequency readout is also displayed on the screen through markers. Plus, the scopes have two memories for digital signal storage! That's right, we said it's a storage scope!

The scopes run on 5 standard AA Alkaline batteries (not included) which provide up to 20 hours of use. Rechargable AA NiMH batteries can be used in place of standard Alkaline batteries and will be automatically charged with the included AC power supply adapter and charger.

The HPS40 also includes an RS232 interface cable for PC connectivity. A simple serial DB9 RS232 connection to your PC provides you with a high resolution bitmap display of your screen at the touch of a button! Perfect for recording measurement results.



If you're working with electronic circuits, automotive applications, audio and stereo applications or any other type of electronic applications, the Personal Scope is for you...at a price that can't be beat! *(Editors note, I carry one of these in my tool box, and it is the handiest thing in there! From audio hum, to DC measurements, I'm always the guy that can find it... and then they assume the same guy to fix it...grrrrrrr!)*

SPECIFICATIONS

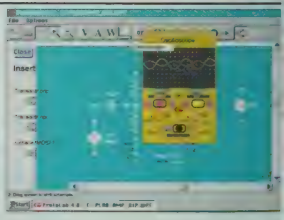
	HPS10SE	HPS40
Max Sample Rate:	10MHz (2MHz single shot)	40MHz (10MHz single shot)
Max Input Bandwidth:	2MHz (-3dB at 50mV, 1V & 20V/Div x 1 setting)	5MHz (-3dB at 5mV/div to 12MHz at 1V & 20V/div)
Input Impedance:	1M ohm, 20pf standard scope probes	1M ohm, 20pf standard scope probes
Input Coupling:	DC, AC, and ground (zero reference)	DC, AC, and ground (zero reference)
Vert Resolution:	8 bit, ±1 bit linearity	8 bit, ±1 bit linearity
Trigger Modes:	Run, normal, once, roll mode for 1s/div and slower timebase	Run, normal, once, roll mode for 1s/div and slower timebase
LCD Graphics:	64 x 128 pixel, white backlit	112 x 192 pixel, white backlit
Signal Storage:	256 samples with 2 memories, max 125 visible samples, 256 using X shift	256 samples with 2 memories, max 179 visible samples, 256 using X shift
dBm Measurement:	-73dB to +40dB, ±0.5dB accuracy (0dBm=0.775V at 600 ohm)	-73dB to +40dB, ±0.5dB accuracy (0dBm=0.775V at 600 ohm)
dBV Measurement:	-75dB to +38dB, ±0.5dB accuracy (0dBV=1V)	-75dB to +38dB, ±0.5dB accuracy (0dBV=1V)
True RMS Measurement:	.1mV to 80V, ±2.5% accuracy	.1mV to 80V, ±2.5% accuracy
P/P AC Range:	0.1mV to 160V, ±2.0% accuracy	0.1mV to 160V, ±2.0% accuracy
Timebase Ranges:	0.2us to 1hr/div, 32 steps	50ns to 1hr/div, 32 steps
Input Sensitivity Range:	5mV to 20V/div at time 1, 50mV to 200V/div at times 10, 12 steps	5mV to 20V/div at time 1, 50mV to 200V/div at times 10, 12 steps
Probe Calibration Output:	2KHz/5Vpp approx	2KHz/5Vpp approx
RS232 Output:	None	Plug-in to DB9 serial cable provided. Push button to PC computer bitmap display
Power Requirement:	9V, 500mA adapter provided	9V, 500mA adapter provided
Batteries (not included)	5 AA Alkaline batteries or 5 AA NiMH rechargeable batteries	5 AA Alkaline batteries or 5 AA NiMH rechargeable batteries
Battery Life:	Up to 20 hours with AA Alkaline	Up to 20 hours with AA Alkaline
Operating Temperature:	0° to 50° C (32° to 122° F)	0° to 50° C (32° to 122° F)
Dimensions:	4.13" x 7.95" x 1.38" (105mm x 220mm x 35mm)	4.13" x 7.95" x 1.38" (105mm x 220mm x 35mm)
Weight:	14 oz (395g) less batteries	16 oz (450g) less batteries
Accessories Provided:	Foam lined carrying case, standard scope probes, AC power adapter/charger, users manual	Foam lined carrying case, standard scope probes, AC power adapter, DB9 RS232 cable, user's manual

HPS10SE	**Personal Scope, 10MHz, Case, Probes, Power Supply, Assembled & Tested**	**$229.95**
HPS40	**Personal Scope, 40MHz, Case, Probes, Power Supply, RS232 Out, Assembled & Tested**	**$299.95**

Protolab Circuit & Test PC Simulator

Create And Test That Circuit... WITHOUT Building It

- ✔ Simulate a circuit BEFORE building it!
- ✔ Simple computer interface and operation!



Easy to use PC interface. Easily create AC & DC circuits moments after installation with ProtoLab's simple "click and drag" component placement and online help. You choose from a complete list of active and passive components, all of which are included. Once built, you can test and analyze your circuit with five virtual instruments also included. Protolab's predesigned circuit library includes: MOSFET & transistor amplifiers, bridges, sinewave oscillators, square-wave oscillators, phase shift oscillators, current mirrors, integrators, differentiators, transistor & MOSFET monostables, LC oscillators, tuned collector amplifiers, LC tuned circuits, power supplies, and voltage stabilizers. For WinPC's.

PLAB4	**Protolab4.0 Test Simulator Software**	**$49.95**

Professional RF Power Meters

KIT — Wired & Tested

- ✔ Broadband: PM50 10 kHz to 450 MHz ± 0.5dB, 10 kHz to 500 MHz ± 2dB; PM10DC: 50 kHz to 250 MHz ± 1.5dB
- ✔ High dynamic range: better than 77dB!!
- ✔ Power Handling: up to 50 Watts continuous maximum; PM10DC low insertion loss, less than 0.1dB
- ✔ Readings auto-range and are displayed in Watts/dBm/etc.
- ✔ Easy to read LCD display with powerful microprocessor

High Performance Power Meters... At A Low Cost!

PM50

The PM line of digital power meters is what every RF lab technician or micro-broadcaster needs on his work-bench. Until now, power meters of this capability cost thousands! Imagine being able to accurately measure RF power from almost any signal source - and with the PM10, be able to tune and match antennas! Once you use one, you will wonder how you ever did without it! And if you are a micro-broadcaster, the PM10DC will allow you to squeeze every drop of signal out of your transmitter into a perfectly matched antenna for maximum range!

The PM50 includes a 50 watt, 50 ohm dummy load allowing you to tune your transmitter off air without causing interference. An intelligent speed controlled fan adjusts cooling of the load according to power measured! Extremely wide power range allows continuous measurement from an amazing 1µWatt to 50Watts, all without any manual range switching or setting - that's over 77dB! And accuracy is an astounding ± 0.5dB over the entire specified frequency range!

The PM10DC is a directional coupler power meter allowing measurement of both forward and reverse power. This is very useful for tuning antennas and checking the entire transmission system. You can easily see the amount of power going out from the transmitter and the amount of power being reflected back from a mismatched antenna. Trim your antenna for maximum efficiency! Extreme dynamic range allows you to get meaningful measurements even with transmitters of less than 1mW of power or up to 50 watts! A powerful processor calculates and displays forward and reverse power, VSWR, dB of directionality, AM percent modulation, peak power, and average power. Try doing that with any other power meter for less than a thousand bucks! So which meter do you need? Use the PM50 if you need to test transmitters off-air or into a good 50 ohm dummy load. And the PM10DC is just the ticket for tuning antennas and checking your entire transmitting system. Both units include the matching case & knob set and power adapter. Case size 5"W x 1½"H x 5¼"D.

PM10DC	**Power Meter/Directional Coupler Kit, Includes Case And 110VAC Power Adapter**	**$119.95**
PM10DCWT	**Factory Assembled & Tested PM10DC**	**$164.95**
PM50	**Power Meter/Dummy Load Kit, Includes Case And 110VAC Power Adapter**	**$109.95**
PM50WT	**Factory Assembled & Tested PM50**	**$154.95**

Sniff-It RF Detector Probe

Wired & Tested

Measure RF With A Standard VOM!

- ✔ Use with any DMM or VOM to measure RF!
- ✔ Low cost RF measurement
- ✔ Can also be used as a field strength meter!

The RF1 is a very sensitive RF detector probe that connects to any digital multimeter and provides a DC voltage output from weak RF signals. This allows very easy tracing of low level RF signals that a counter can not pick up. Wide frequency coverage of 100 KHz to over 1000 MHz lets you track down most any problem in transmitter chains, receiver stages, or even complex PLLs. Uses exotic, low barrier microwave detector diodes to give exceptional sensitivity which can see signals down to microwatt levels! A great low cost way of checking for RF. Fully assembled and tested, and includes standard banana plugs for use with any standard VOM, DMM or voltmeter. If you need to measure RF and don't want to spend big bucks, here you go!!

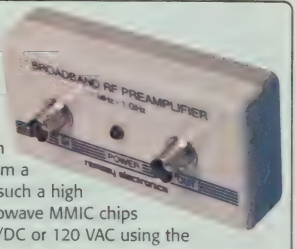
RF1	**RF Sniff-It Probe, Assembled & Tested**	**$22.95**

Broadband Preamp

Wired & Tested

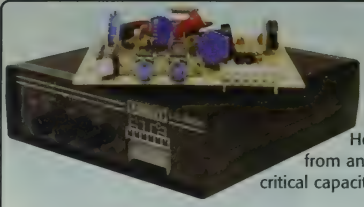
- ✔ Broadband...from 1 MHz to 1000 MHz, usable to 2000 MHz!
- ✔ Low noise figure, < 2.5dB
- ✔ Improves AM, FM, VHF TV, UHF TV, and HF reception. 50 – 75 ohm imp.
- ✔ Over 25 dB Gain with up to 100 mW of power output!

Broadband, Low Noise... And 25dB Gain!



Ever wish you could "perk-up" your counter or scanner to read weak signals? Or how about boosting that cable TV run to drive sets throughout the house or maybe preamping that TV antenna to bring in that blacked out football game from a distant city? The PR2 broadband preamp is the answer to all these needs as well as many others! Since the PR2 has such a high compression point of almost 100 milliwatts, you can even use it to boost the power of small, micro transmitters! Microwave MMIC chips from NEC Japan enable the PR2 to have gain up to 2 GHz although we only spec the PR2 to 1 GHz. Runs on 12 VAC/DC or 120 VAC using the included wall adapter. Size: 4" x 2" x 1".

PR2	**Broadband Preamp, Factory Assembled & Tested**	**$69.95**



KIT E-Z Check Capacitance Inductance Mete

Verify And Measure Values In Seconds!

- ✔ Connects to any digital multimeter for display
- ✔ Handy push-in test connector for unknown components
- ✔ Inductance: 10 µH to 10 mH, Capacitance: 2 pF to 2.0 µ

How many times have you wished you could simply and easily check a capacitor value or select an inducto from an unknown assortment? With the growing popularity of active filters and switching power supplies using critical capacitors and inductors, no shop should be without a reliable and convenient way to measure these parts.

The LC1 capacitance-inductance meter hooks up to any digital multimeter and will allow you to measure inductors from 10 µH all the way up to 10 mH, and capacitors from 2 pF to 2.0 µF. Components to be measured are easily connected to the LC1 through the handy push-in test connector. Our detailed assembly manual guides you to a properly working finished kit and also provides you with ideas on proper capacitor and inductor selection fo various circuits.

Included with your kit are calibration components to assure proper accuracy of your meter. Uses all CMOS circuitry and is powered by a common 9 volt battery (not included). Includes our nifty matching case set, measuring 5"W x 1½"H x 5¼"D.

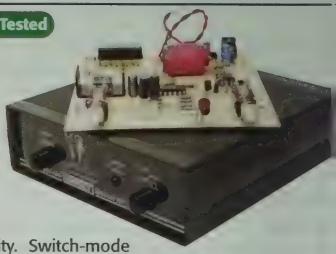
LC1C	**Capacitance-Inductance Meter Kit With Case**	**$44.9**

Dr. NiCad Battery Conditioner-Charger

KIT Wired & Tested

- ✔ Unique discharge before charge circuitry eliminates "memory effect"
- ✔ Safety first circuit with built-in timers and voltage sensors prevents battery damage

Don't Throw Out Those Batteries!



Advanced circuitry has optimized discharge-before-charge to eliminate memory effect and to condition batteries that have been poorly cared for in the past. Quick charge rapidly brings battery to full charge in less than 1 hour; just 15 minutes for some types!

And "top-off" charge mode squeezes every last bit of energy into each cell for the absolute maximum capacity. Switch-mode regulator controls constant current charge while being monitored by a negative delta-V system that cuts off the fast charge at the exact point of full charge...batteries are charged, not cooked!

Runs on 12 to 15 VDC at up to 1.5 A. The custom matching case set is included, measuring 5"W x 1½"H x 5¼"D.

DN1C	**Dr. NiCad Battery Conditioner and Fast Charger Kit With Case**	**$44.9**
DN1WT	**Factory Assembled & Tested DN1 With Case And Power Supply**	**$79.9**

KIT Wired & Tested

Lead Acid Battery Charge

No More "Fried" Gell Cells!

- ✔ Automatic ambient temperature compensation
- ✔ Bright front panel charge indicator
- ✔ Automatically adjusts charge voltage depending on the battery status

The LABC1 came to life because our shop forklift never starts! Could we have the alternator fixed so the battery would charge? Sure... but where's the fun in that? The problem made us think of a common question asked by our customers "Why am I wasting money replacing those fried Gel Cell batteries long before their expected life span!" Thus the LABC1 was born.

The kit features fully automatic temperature compensation and automatic voltage level adjustment to avoid the dreaded "Over-Charging" scenario ofter found with other chargers! Whether you're charging your hobby kits' Gel-Cell or topping off the 12 Volt battery on your lawn mower, it's a simple two wire hook-up and walk away! When the battery comes to a full charge the LABC1 switches into "Float Charger" mode, keeping your battery ready for use at its optimal level.

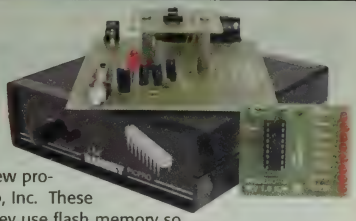
To start charging your lead acid batteries the right way and avoid costly replacements, try the LABC1! Requires 14VAC@2A; order the PS21 power supply below. Includes the matching case set, measuring 5"W x 1½"H x 5¼"D.

LABC1C	**Lead Acid Battery Charger Kit With Case**	**$39.9**
LABC1WT	**Factory Assembled & Tested LABC1 With Case And PS21 Power Adapter**	**$89.9**
PS21	**16VAC Output Power Adapter**	**$19.9**

PICPRO Pic Chip Programmer KIT

- ✔ Programs PIC 16C84, F83, F84 microcontrollers
- ✔ Easy hookup-connects to your computer parallel port
- ✔ Includes a simple first project to test your programmer
- ✔ Download Free PICPRO software

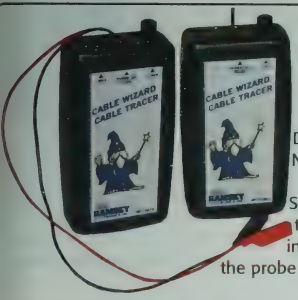
Make Your Next Project Microprocessor Controlled... WITH EASE!



You've seen all the super neat projects using the popular PIC series of microcontrollers. Here's a really easy to use programmer to get you up and running fast! PICPRO is our new programmer for the PIC16C84, PIC16F84, and PIC16F83 microcontrollers made by Microchip, Inc. These chips are three of the more popular PIC microcontrollers, whose special feature is that they use flash memory so no UV eraser is needed. They are also programmed by a serial data protocol, making the programmer circuit simple, easy to understand, and easy to use.

What does all this mean to you? It's a breeze! The PICPRO software required to operate the programmer includes editor software, run software, assembler software, and programmer software. All of these, as well as updates, are available on the Ramsey Electronics website. PICPRO is based on NOPPP, a PIC programmer designed by Michael Covington, and featured in Electronics Now, September 1998. Includes the matching case and knob set and AC power supply. Start programming those powerful microcontrollers now!

PIC1	**PICPRO Pic Chip Programmer Kit With Case**	**$59.95**



Cable Wizard Cable Tracer Wired & Tested KIT

Which Cable Is It? NOW You Know!

- ✔ Locate and identify any cable from telephone pairs, ethernet, coax, or even your doorbell!
- ✔ Find that ONE cable in the bundle QUICK!

Did you ever have to identify the "other end" of that cable? Well up to now you had to ohm it out, cable by cable. Now with the Cable Wizard you can quickly identify that cable without even touching the other end!

Simply connect the Wizard to the end of the cable you're working with. Then use the Wizard receiver to sniff out the other end of the cable, whether it's close to you...or across an entire building. The circuit sends out a pulsating signal down the cable which is heard in the receiver when you're close to the cable. All you have to do is hold the probe near the cable; it doesn't get much simpler than that!

The transmitter is equipped with a standard RJ45 telco connector for standard 2,4,6, and 8 pair connectors, and insulated clip-on leads. WCT20 includes both transmitter and receiver units. Runs on a standard 9VDC battery (not included) and includes the custom case sets shown.

WCT20C	**Wireless Cable Tracer Kit**	**$49.95**
WCT20WT	**Factory Assembled & Tested WCT20 With Case**	**$89.95**

Coaxial Cable Tester Wired & Tested

- ✔ Gives you absolute go/no-go results
- ✔ Indicates good, open, or shorted
- ✔ Supports popular coaxial connector types!

Good Or Bad Coax Cable? NOW You Know!

- ✓ *RCA Phono-Female*
- ✓ *BNC-Female*
- ✓ *SMA-Female*
- ✓ *SMB-Male*
- ✓ *SMB-Female*

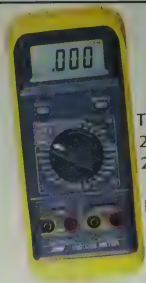
It all started when we were looking for an easy way to test coaxial cables and jumpers on our production floor. We were using the old DMM probe test, and that was getting pretty lame! So we told our engineers to come up with a box to test all the coax configurations that are popular.

It became the most used item on the test floor! They put away the Fluke meters, and put one of these with every set of crimpers...and we've noticed an incredible decrease in failed cables!

So we figured if WE found it handy, so would you! The CCT1 gives you an absolute go/no-go test, showing good, open, and shorted conditions. The CCT1 has dual sets of connectors on the front panel.

Any coaxial cable with any combination of these connectors can be instantly go/no-go tested. That means you can test same connector cables as well as cross connectorized cables. Just connect both ends of your cable to the box and instantly know its status! It doesn't get much easier than that. Operates on 12VDC with AC power adapter included.

CCT1	**Coaxial Cable Tester, Factory Assembled & Tested With Case**	**$64.95**



Wired & Tested

Professional LCR & Temperature Meter

✔ Temperature probe included

Measure Resistance, Capacitance, Inductance, & Temperature!

The DMM240 handheld LCR meter will measure resistance from 20 to 2000M Ohms in nine ranges. It will also measure capacitance from 200pF to 200mF and inductance from 2µH to 20H and much more.

It has a 3½ digit, 2000 count display. Meter Capacitance in 8 Ranges, Max & Data Hold Feature, and Autoranging Frequency to 15MHz. Comes complete with temperature probe, standard probes, and holster style case.

Display:	3½ Digit, 2000 Count
DC Volt:	0-20V ±2%
Ohm:	0-20/200 ohm/2/20/200/2000K ohm/20/200/2000M ohm ±0.3%
Cap:	0-200P/2/20/200nF/2/20µF ±2%/200µF to 200mF ±3%
Ind:	0-200µH/2m/20m/200mH/2H/20H±5%
Temp:	-20-500C ±2% 500C-750C ±3%
Freq:	Autoranging up to 15MHz ±0.1%
Cont:	Audible buzzer, diode test function
Over:	24VDC/24VAC Overload Protection 10A Fused Protection
hFE:	Test Function

DMM240 **LCR & Temperature Meter** **$99.9**

Compact Multimeter With Data Hold

Wired & Tested

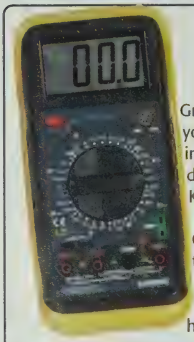
✔ Backlit display

Perfect For Your Tool Box!

Display:	3½ Digit LCD, backlit, 45 x 18mm Data hold
DC Volt:	200mV/2/20/200/1000V ±2%
DC Amp:	200u/2m/20m/10A
AC Volt:	200/600V
Ohms:	200/2K/20K/200K/2M ohm, Continuity buzzer, hFE & diode test
Size:	68mm x 138mm x 30mm
Battery:	Standard 9V, included

If you're looking for a nice little DMM to keep in your tool box, this one's for you! Small and inexpensive, yet packed with great functions and features. Has all the normal ranges of a pocket DMM plus a plug-in transistor tester socket for quick transistor testing. Plus a built-in continuity test provides an audible buzzer for eyes-off testing. The oversized 3½ digit display has a selectable backlight feature which illuminates the display in the dark. Besides all this, there is a professional "data hold" feature to hold and store a reading. Also features a high impact rubber holster just like the big boys! Includes a great set of test probes and even has the 9V battery installed. All this for under $20! *(That's why there's one in my tool box!)*

DVM850BL **Compact Multimeter With Data Hold** **$14.9**



Multimeter With Temperature, Capacitance, & Frequency

Wired & Tested

This is NOT Your Ordinary DMM!

✔ 30 ranges
✔ Includes temperature probe

Great for the technician, builder, hobbyist, or auto mechanic, this little DMM is not your typical digital multimeter! Measures DC Volts and AC Volts at 10M ohm impedance. Measures DC and AC current, resistance up to 200M ohm and it doesn't stop there! It also measures capacitance up to 20uF, frequency up to 20 KHz, and temperature all the way up to 1000°C.

Of course it also includes a dedicated transistor socket for NPN and PNP transistor testing, auto power off to save batteries, audible continuity and diode testing, and an oversized display. Sound too good to be true for 40 bucks? We thought so too! That's why they're here! Comes complete with a professional rubber holster, standard & temperature test probes, user's manual, and a standard 9V battery.

Display:	3½ Digit LCD, 31 x 61 mm
DC Volt:	200mV/2/20/200/1000V ±0.5%
DC Amp:	2m/20m/200m/20A ±0.8%
AC Volt:	2/20/200/700V ±0.8%
AC Amp:	20m/200m/20A ±0.8%
Ohms:	200/2K/20K/200K/2M/20M/200M ohm, ±0.8% Continuity buzzer
Cap:	2000pf/20nf/200nf/2uf/20uf ±2.5%
Freq:	20KHz ±1.0%
Temp:	-50°C to 1000°C ±0.75% Continuity buzzer, hFE & diode test
Size:	88mm x 170mm x 38mm
Battery:	Standard 9V, included

DVM890 **Multimeter With Temp, Capacitance & Frequency** **39.9**

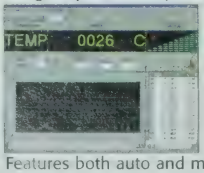
Dual Display DMM With RS232 Output

Wired & Tested

✔ RS232 output to your PC!
✔ Manual/auto range

Digital Readout, Analog Bargraph, PLUS RS232 Output!

We gave you an inexpensive pocket DMM above for under 20 bucks. Then we gave you a super multi-purpose professional multimeter that measured virtually everything for 40 bucks. What's next you ask? You won't believe it! Everything PLUS RS232 serial data output for connection to your PC! That's right, now you can measure, control, and store your DMM and its readings on a graphical display on your PC!



Features both auto and manual ranging with a large 3¾ digit display with a 38 segment analog bargraph. Includes all software, cable, probes, battery, and case.

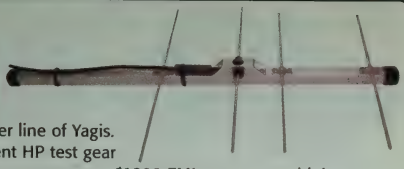
Display:	3¾ Digit LCD, backlit,38 segment analog bar graph, with data hold
DC Volt:	4/40/400/1000V ±0.5%
DC Amp:	4mA/400mA/10A ±1.2%
AC Volt:	4/40/400/750V ±1.2%
AC Amp:	4ma/400ma/10A ±1.5%
Ohms:	2400/4k/40k/400k/4m/40m ohm ±1.2% Continuity buzzer, diode test, hFE test
Cap:	4nf/400nf ±4.0%
Temp:	0-400°C, 401 to 750°C ±3.0%
RS232:	DB9 serial with Windows software
Size:	78mm x 186mm x 35mm
Battery:	Standard 9V, included

DVM345DI **Dual Display Multimeter With RS232 Output** **$84.95**

High Performance Yagi Antennas

KIT

Commercial Quality At A Hobbyist's Price!



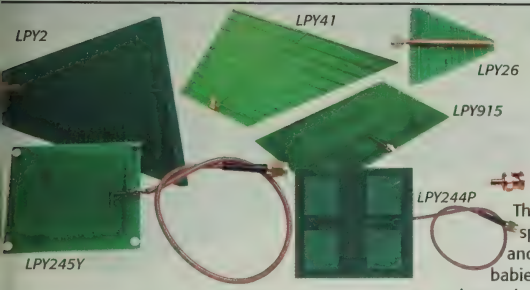
- ✔ Construction that's rugged and simple
- ✔ Feed point fully watertight and sealed
- ✔ Cut elements during assembly to exact frequency desired

Joe Reisert, WIJR, probably the best known VHF'er, has entered into the antenna business with a killer line of Yagis. Joe sent us a couple of antennas to check out and were we impressed! We've got some pretty decent HP test gear here at the plant and measuring his antennas was a delight. Talk about a match at 50 ohms impedance; even our $1800 EMI antenna couldn't come close to one of Joe's antennas.

Model	Elements	Gain	F/B Ratio	Length	Frequency
140-3	3	5 dB min	20 dB min	3 ft	140 - 300 MHz
400-4	4	7 dB min	15 dB min	2 ft	300 - 500 MHz
918-4	4	7 dB min	14 dB min	1.2 ft	902 -928 MHz

Construction is rugged and simple. Joe wisely made the feed point fully watertight and sealed the coax right into it - no more antennas that go flaky when the weather's bad. Another nice feature is the ferrite sleeve balun, most often left out on other antennas. You'll find no coax radiation with this Yagi. In short, these are the finest 3 and 4 element Yagis on the market - we guarantee it!

1403	Yagi Antenna, 140-300 MHz	$79.95
4004	Yagi Antenna, 300-500 MHz	$79.95
9184	Yagi Antenna, 902-928 MHz	$109.95



Wired & Tested

Precision Printed Circuit Antennas

Broadband Coverage And NO TUNING!

- ✔ Small thin size with excellent performance
- ✔ Very directional—ideal for transmission or reception use
- ✔ No tuning needed!
- ✔ Rugged FR-4 construction
- ✔ Available log periodic, yagi, or patch!

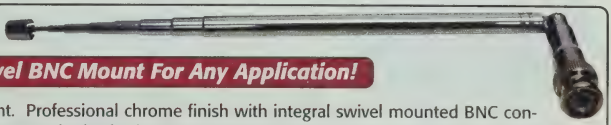
This series of Log Periodic and Yagi PCB Antennas allows you to cover the entire spectrum from 400 MHz to 11.0 GHz! If you want to get the maximum performance out of your UHF to low frequency microwave wireless system, one of these little babies is the answer! Their directional property "compresses" the signal into a strong beam that is 4 times more powerful in the desired direction.

hey are the ideal antennas for scanners, wireless LAN's, and other wireless devices. When you need a dedicated point-to-point link, they have no qual! Maintenance free construction on rugged FR-4 material boasts the added advantages of no tuning and no fragile antenna elements to break or wist! The small size and wide bandwidth make them ideal for feeding reflector antennas such as easily constructed corner reflectors or parabolic grids. ick the one that's right for you and start enjoying the fruits of a well designed system!

he Log Periodic models LPY41 (400-1,000 MHz, SMA-female), LPY2 (900-2,600 MHz, SMA female), LPY26 (2,100-11,000 MHz, SMA-male) , LPY244P 2.4GHz WiFi Patch, SMA male), and the LPY245Y (2.4GHz WiFI yagi, SMA male) easily interface to your system via the provided connectors. The wide andwidth characteristics of the Log Periodic design ensure total reliability within their respective ranges. The Yagi model LPY915 (915 MHz, BNC-male) ; a patented design perfect for directionally extending the range of your cordless phone or other 915 MHz wireless device. Finally, the answer to those oor range blues!

PY41	Logi Log Periodic PCB Antenna, 400-1,000 MHz, Factory Assembled & Tested	$39.95
PY2	Logi Log Periodic PCB Antenna, 900-2,600 MHz, Factory Assembled & Tested	$34.95
PY26	Logi Log Periodic PCB Antenna, 2.1-11.0 GHz, Factory Assembled & Tested	$34.95
PY915	Directional Yagi PCB Antenna, 915 MHz, Factory Assembled & Tested	$29.95
PY245Y	Directional Yagi PCB Antenna, 2.4GHz WiFi, 8.5dBi Forward Gain, Assembled & Tested	$29.95
PY244P	PCB 4-Bay Pach Antenna, 2.4GHz Wireless LAN, Assembled & Tested	$34.95

elescopic Whip Antenna



Swivel BNC Mount For Any Application!

- ✔ High quality with BNC connection
- ✔ Covers VHF and UHF bands

eal for handheld portables, receivers, and communications test equipment. Professional chrome finish with integral swivel mounted BNC connector for virtually any application! From the top of equipment to 90 degrees on the back of equipment, it will work like a champ! Whip extends 5.25" 27.75" to cover a wide variety of ranges with ease!

A10	Telescopic Whip Antenna	$14.95

Wired & Tested KIT

Signal Magnet Antenn

Remove The Noise Automatically!

- ✔ Outstanding results from 500 KHz to 15 MHz
- ✔ High-Q Ferrite Rod antenna with Faraday shield eliminates noise from power lines, light dimmers, most static crashes, and mo

This antenna responds only to the magnetic field of the desired station and ignores the electrostatic field where most interference is found. It does a remarkable job pulling in stations lost down in the noise of powerline crud, fluorescent lamp buzz and light dimmer hash. Plus it's very directional, able to null strong stations on the same or nearby frequencies! We developed this antenna to pull in WGR, a 250 watt nighttime station 75 miles away, so we could listen to Buffalo Bills talk radio during the night. You can imagine all the powerline and equipment noise we have here at the factory. So, we came up with this ferrite rod, varactor tuned active antenna that's Faraday shielded - it only responds to the magnetic field - and boy does it do the job!

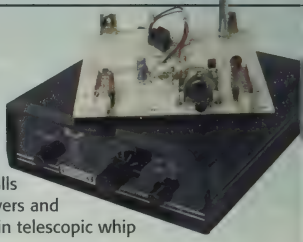
Designed to cover the AM broadcast band, but includes details on building for any frequency range up to 15 MHz; it works gang-busters on Shortwave. Works indoors or out, contained in rugged PVC pipe with a single RG-59 coax cable connector. Operates with up to 500 feet of coax cable (you supply between antenna assembly and control box (size: 5" x 5 ¼" x 1½"). Includes all parts, matching case set and precut PVC materials. Operates on external 120 VAC power adapter that is included. Antenna is 9 1/2" x 9" long, L-Shaped 1" pvc pipe with end caps. *(It worked just great to listen to th Bills players explain for 4 straight years why they lost the Super Bowl!)*

SM100	**Signal Magnet Noise Reduction Antenna Kit With Case**	**$89.9**
SM100WT	**Factory Assembled & Tested for AM Band**	**$134.9**

Active Antenna KIT

- ✔ Dual Preamp for HF or VHF/UHF
- ✔ Performs like a 60' Long Wire!
- ✔ Operates as a stand-alone antenna or in conjunction with an existing antenna

The Easy Antenna... Regardless Of Frequency!



Our AA7 features both a high gain, low noise FET and a superb microwave bipolar amplifier, letting you use the antenna on all bands - shortwave, HF, VHF and UHF! Imagine a self-contained unit just 4 inches square that pulls in the signals like a 60 foot long wire; that's the advantage of an active antenna. For jazzing up VHF/UHF receivers and scanners, the AA7 has you covered, too. Over 15 dB of gain pulls in the weak ones, whether you use the built-in telescopic whip or an outside antenna.

Features of the AA7 include: Front panel RF gain control, power switch with preamp bypass switching, two position HF and VHF/UHF selector, rear panel input and output connectors, convenient 9 volt battery operation and on-board telescopic whip antenna. We think you'll agree that the AA7 is simply the most practical and best value of any active antenna on the market! Includes whip antenna and matching case set. Operates on a standard 9VDC battery (not included). Case size 5"W x 1½"H x 5¼"D.

AA7C	**Active Antenna Kit With Case**	**$39.9**

KIT

Tru-Match FM Antenn

Rugged PVC Construction... Keeps The Weather Out!

- ✔ Fully weatherproof - rugged PVC construction
- ✔ Matches 50 or 75 ohm systems
- ✔ Tunable for perfect match over the entire 88 to 10 MHz FM band

We've been besieged with calls asking us where to get a good quality FM Broadcast antenna. Remember, matching your antenna to your transmitter is the single most important link in your transmitter setup - and a good antenna an match are the secret to getting maximum range.

When we say "match" we mean electrical impedance match... if the proper impedances are not maintained between transmitter and antenna, power is reflected away from the antenna and back into the transmitter! This can cause the final amplifier stage to be damaged, not to mention spurious signals and lousy range. Buy this kit and get the most from your FM Broadcaster!

TM100	**FM Broadcast Low Power Antenna Kit (25 W Max)**	**$69.9**

Looking For FM Broadcast Antennas?

See our FMA200 5/8 Wave vertical antenna on Page 8

GET MAXIMUM RANGE BY USING THE PROPER ANTENNA!

Temperature Controlled Soldering Station & Fume Extractor

- ✔ Integral fume extractor quickly removes smoke and fumes.
- ✔ Built-in high efficiency, low noise brushless exhaust fan
- ✔ Easy to replace activated carbon filter absorbs noxious flux and lead fumes
- ✔ Variable electronic temperature controlled soldering station attached
- ✔ Ergonomic mini-handle soldering iron
- ✔ ESD safe, insulated ceramic heater, spike free zero voltage switching
- ✔ All-in-one extremely convenient package, ready to use on your bench

Automatic Fume Extraction At EVERY Work Station!

We've all sat at the bench and soldered some quick circuits. We have also sat at the bench have worked on a big project, soldering for hours at a time, not thinking twice about the fumes. The big culprit is the rosin core center in electronic solder. This flux is an integral part of the soldering process to prepare the work surface and the components being soldered.

Not to get overly technical, but flux is composed of rosin-resin and mixed with an activator (halogen organic agent) that, as the temperature increases, generates noxious components such as salicylic acid and pinene commonly seen as smoke rising from the work area. High content ratios of resin generate phinol (C6H5OH) and the activators can emit hydrogen chloride (HCL) and other compounds. This is stuff you really don't want to constantly breathe while you're soldering! Not only do you not want to, but there are occupational hazard standards controlling the permissible amounts of such compounds in the work area. The 456DLX can not only save you and your health from the fumes, but help you meet these standards!

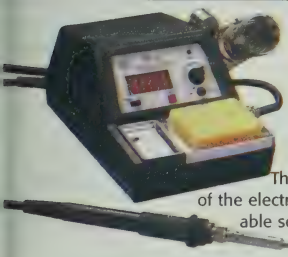
Designed for use on the factory floor, in R&D, and by hobbyists in their homes, the 456DLX provides an economical, space saving, and super efficient method to eliminate the hazard of solder fumes. It also improves the work place by eliminating headaches, nausea and eye irritations often associated with exposure to these fumes. A high performance fan together with an easy to replace activated carbon filter does a super job. The activated carbon has a surface area of 1250 m square/gram and the total weight of the filter is 500 grams/meter square. The dust collection efficiency of the filter is 30% while the carbon filter can absorb up to 30% of its carbon weight in noxious components. In other words, it works!

When we looked for an ideal solution we were extremely conscious of limited bench space. Therefore, the fume extractor couldn't take up much more space than the soldering station we were using. The answer was simple...have both units in one! The 456DLX features a variable electronic temperature controlled soldering station built right in! Variable control gives you a wide temperature of 500-800° F. The iron has a new ergonomic mini-handle for comfort and ease. Comes complete with a precision 1/32" soldering tip. Additional interchangeable tips are available in a variety of sizes.

That's right, put your old soldering station or soldering iron away and use just one product for both soldering and fume extraction. A protected iron holder and sponge tip cleaner are also attached to the side of the station making it the perfect all-in-one soldering tool. If you're looking to control the hazardous fumes of soldering, looking for a super high quality temperature controlled soldering station, and staying on a budget, the 456DLX is for you! From Xytronic. *(You will be amazed when you see the fumes from each solder connection get sucked away from your face!)*

456DLX	**Temperature Controlled Soldering Station/Fume Extractor Station**	**$132.95**
98804	**Replacement Interchangeable Tip, 1/32" For 456DLX and 137ESD**	**$9.95**
98805	**Replacement Interchangeable Tip, 1/64" For 456DLX and 137ESD**	**$9.95**
98806	**Replacement Interchangeable Tip, 1/16" For 456DLX and 137ESD**	**$9.95**
98807	**Replacement Interchangeable Tip, 5mm Right Angle Chisel For 456DLX and 137ESD**	**$12.95**

Auto-Temp Precision ESD Safe Soldering Station



Lab Quality At A Hobbyist Price!

- ✔ Digital tip temperature readout in ° F or ° C
- ✔ Temperature adjustable from 392 to 896° F (200 to 480° C)
- ✔ Rapid heat-up ceramic heating element
- ✔ Lightweight ergonomic soldering handle
- ✔ Front panel calibration port

The 137ESD represents the most versatile and advanced soldering station available today that meets all of the needs of the electronics production industry, service technicians, engineering departments, and the advanced hobbyist. The detachable soldering iron handle is designed with a highly insulated ceramic heating element which incorporates a state-of-the-art PTC sensor to insure accurate temperature performance.

Zero voltage switching and fully grounded design makes the 137ESD safe for Electro-Sensitive Devices. That with the highly accurate temperature stability over the entire range makes it ideal for use on such circuits and components. The lightweight ergonomic handle and grip reduces operator fatigue while making soldering operations a breeze. Comes complete with one precision 1/32" soldering tip. Uses the same interchangeable tips as the 456DLX above. Check our website for additional options, tips, and configurations. From Xytronic.

137ESD Auto-Temp Precision ESD Safe Soldering Station **$167.95**

Lead Free Soldering Station

NEW!

- ✔ Specifically designed for Lead Free soldering
- ✔ Temperature adjustable from 392 to 842° F (200 to 450° C)
- ✔ ESD safe, meets or exceeds MILSTD for CMOS device protection
- ✔ RoHS application compliant
- ✔ Ergonomic mini-handle soldering iron
- ✔ Digital tip temperature readout in °F or °C

Get Ready For Lead Free and RoHS TODAY!

We've all heard about it and are getting ready for it...referred to in the industry as RoHS from the European Union. In plain English it stands for the Restrictions of the use of hazardous substances in electrical and electronic equipment. What this means to all of us in the electronics business is that we need to start soldering and designing/building circuits that are lead-free. Lead is the "hazardous substance" as defined by RoHS standards! There, I said it all, and now you know the answer!

What to do about it? Solder will be composed of Tin, Copper, and Silver components therefore lacking lead, the most common component thought of in regards to soldering. For the casual hobbyist, this merely means that you need to have the proper equipment needed for such soldering. Removing lead makes the melting point higher and therefore requires a higher temperature soldering iron or station. There are a lot of other issues but I don't have a hundred pages and several more hours to go through it! I suggest you research RoHS on the internet for more information!

We DO have, however, a very economical soldering station specifically designed for lead-free soldering. That means a variable tip temperature to reach up to 850° F while maintaining a stability of ±3°C while operating. Needless to say, such regulation and high temperature requires specialized heating elements with rapid ramp up and down time. In addition, suitable tips must be available to maintain proper quality at the temperatures required for lead-free soldering. Includes a standard 1/64" fine chisel solid tip designed for lead-free soldering.

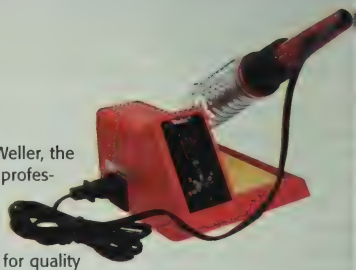
The LF1000 is your answer to RoHS and the start of your compliance with lead-free soldering practices. Don't delay, get ready today! From Xytronic.

LF1000	**Lead Free Soldering Station With Digital Temperature Control**	**$179.95**

Variable Temperature Soldering Station

- ✔ Variable temperature controlled!
- ✔ 5 to 40 Watt
- ✔ Built-in holder and tip cleaner
- ✔ Interchangeable tips

Don't Damage Your Board... Control The Temperature!



Here's the ideal entry level soldering station for building your Ramsey kit - and for your bench! Made by Weller, the leader for decades in electronic soldering equipment. The WLC100 is the perfect soldering station for the professional or serious hobbyist who requires higher performance than a standard soldering iron, but doesn't want to pay a fortune! The WLC100 soldering station provides variable power from 5 to 40 watts for precise tip temperature control. Just like the expensive industrial soldering stations! A built-in holder and tip cleaning sponge are included. A pre-tinned 1/8" screwdriver tip comes with the station. If you're looking for quality on a shoestring budget, the WLC100 is for you! Operates on 120VAC, 60Hz. From Weller.

WLC100	**Weller Soldering Station, 5-40 Watt Temperature Controlled**	**$49.95**
ST2	**3/32" Screwdriver Tip**	**$6.95**
ST3	**1/8" Screwdriver Tip**	**$6.95**
ST4	**3/16" Screwdriver Tip**	**$6.95**
ST6	**1/32" SMT Screwdriver Tip**	**$6.95**

RAMSEY'S TEN COMMANDMENTS OF GOOD PC-BOARD SOLDERING

1. *If the soldering iron tip is covered with burned rosin, it cannot heat your connection very well.*
2. *If you heat only the wire and not the wire and PC trace together, a cold, bad connection is likely.*
3. *If your soldering tip is big enough to bridge two adjoining connections, it probably will!*
4. *Dirty, grubby solder will contribute to dirty, grubby connections.*
5. *Any use of acid core (plumbers!) solder in electronics work will destroy everything...DON'T USE IT!*
6. *A connection in a large area of PC-board copper requires more heat than one pin of an IC.*
7. *If your connection looks dull or brittle, it's no good.*
8. *If your connection looks like a ball instead of a shiny cone, it's no good.*
9. *Thin fresh shiny rosin core solder is easier to use for PC-board work than thicker "hardware store" solder.*
10. *Pre-tin any stranded hookup wires leading in and out of your PC-board kit project. It will prevent problems later!*

Through Hole Soldering

Surface Mount Soldering

Looking For More Soldering & Desoldering Products? Visit www.ramseykits.com

Technician's Solder

✔ **Electronics 60/40 blend!**
✔ **.032" diameter, 1 pound spool**

Whether it's for building your new kit, or just for your bench, this is the perfect solder. Don't destroy your kit investment by using the wrong solder, or solder with low quality flux core. This solder is made exclusively for electronic applications by one of the leading manufacturers. The size is perfect for board soldering, thru-hole, SMT and more. It is 60/40 Tin/Lead and 100% non-corrosive. One pound spool.

RTS12 **60/40 Electronics Solder, 1 Pound** **$14.95**

Solder Sucker

✔ **Eliminate PC board damage!**
✔ **Cleans out holes with ease!**

For 5 bucks, this will probably be the most valuable tool you've ever bought! Even the most experienced solderer has problems removing components from PC boards without one! One hand loading and one hand operation. Just heat up the joint, place the special tip over the joint, and squeeze the trigger. Solder is sucked right from the board and even plated-through holes! It's that easy!

SS01 **Solder Sucker** **$4.95**

Helping Hands & Magnifier

✔ **Built-in magnifier!!**
✔ **Alligator clip holders grip anything!**

So you're trying to hold that small board, while holding the transistor you're trying to solder in, and holding the soldering iron, and holding the solder. Wait a minute, that's 4 hands! Not a problem! Just clip the board, junction or component you're working on onto the bench holder, swivel it wherever you want it, and go to work! What, you can't see? It even has a built-in magnifier!

HH3 **Helping Hands & Magnifier** **$8.95**

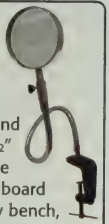
Panavise Bench Vise

✔ **Holds PC boards at any angle!**
✔ **Heavy duty weighted base!**

Trying to solder and unsolder tiny components on small boards can be a challenge for even the most experienced. Here's a gem of a handy vise that is very sturdy and has the flexibility to hold boards at virtually any angle. The heavy base holds even the largest boards without being attached to a bench. Includes 2 7/8" jaws and a large base/parts tray with lockable flex joints.

RTS13 **Panavise Bench Vise** **$39.95**

Bench Gooseneck Magnifier

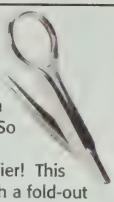


✔ **3½" magnifier!**
✔ **19" flexible gooseneck!**

When you're working with small surface mount components (SMT) there's nothing like a stronger set of eyes! Well we found the perfect, and incredibly economical solution! This large 3½" magnifier is attached to a 19" gooseneck that stays right where you put it. And that is usually between your eyes and the PC board you're soldering! Heavy duty cast bench clamp mounts to any bench, desk, or counter top.

VTMG5 **Bench Gooseneck Magnifier** **$7.95**

Magnifier Tweezers



✔ **The perfect 2-in-1 tool for SMT!**
✔ **Great for your tool box!**

Working with SMT components a good pair of tweezers is a must. And as you know, a good magnifier is also a must. So what do you keep in your tool box to solve THAT problem? Simple, this super handy combination tweezers and magnifier! This 1" magnifier is mounted on a slick 2½" chrome handle with a fold-out precision tweezers. Focal point for the magnifier is matched to the tweezers point for easy use.

VTMG7 **Magnifier Tweezers** **$3.95**

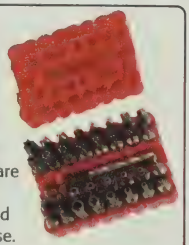
Non-Conductive Tweezers

✔ **ESD safe!**
✔ **Great for SMT and other small parts!**

We've discussed tweezers and magnifiers while working with SMT components. Working with some highly sensitive components our engineers asked for some ESD safe tweezers. We looked, we found, and now that they're all set, here they are for you! This set of 4 non-conductive tweezers are perfect for any static sensitive devices you may be working on. And...they are priced right!

TTWSET2 **Non-Conductive Tweezers Set** **$3.95**

33 Piece Security Bit Set



✔ **5 different types of security bits!**
✔ **Handy case included!**

We've all run into them. Those special little screw heads that you can't remove! They are frequently used in electronic equipment to keep you out of it! Now with this 33 piece set of bits your headaches are gone! Includes standard ¼" driver bits for secure torx/star, secure hex, secure tri-wing, secure fork and secure four wing, in all common sizes. Includes case.

VTBT5 **33 Piece Security Bit Set** **$7.95**

Optivisor Headband Magnifier

✔ **See those parts at 2.5x magnification!**
✔ **Professional quality!**

Probably the handiest helper you can have for working with small electronic parts. Working with today's subminiature components, it's really easy to make a mistake. The Optivisor is your solution! One size adjustable headband tightens around your head. When you need to see a closeup view, simply flip the visor down. When done, flip back up. It's that easy! Fits over your standard glasses. Same quality as the ones you see your doctor use!

TS26 **Optivisor Headband Magnifier** **$29.95**

COM3010 Communications Service Monitor

Full Duplex, Loaded With Features... At A Sensible Price!

- ✔ 100 kHz to 1.0 GHz, full duplex
- ✔ Built-in power meter & dummy load
- ✔ Built-in frequency counter
- ✔ Built-in sweep generator
- ✔ Built-in SINAD meter
- ✔ Built-in calibrated RSSI meter
- ✔ Built-in RS232 control
- ✔ Built-in Li-Ion battery packs

In 1986 we introduced the COM3 Communications Service Monitor. Rivaling the performance and features of communications service monitors selling for $10K and more, the COM3 broke the $2,000 price barrier! For the very first time Ramsey Electronics made it economically possible for every service vehicle to have their own service monitor! From 1986 until 2003 the Ramsey COM3 became THE STANDARD for low cost, performance packed service monitors with over 5,000 of them put into operation throughout the 2-way radio, pager, and other communications industries.

That legacy continues today with the Ramsey COM3010. The COM3010 is our brand new, full duplex service monitor designed from the ground up to give you the best features available at a price that can't be beat! We asked the owners of those 5,000 COM3's what they would like to see in a brand new Service Monitor. We took a long hard look at the competitive units available and came up with the best of both worlds! The COM3010 provides some of the greatest features available in a service monitor today, at a fraction of the cost of the competition.

SPECIFICATIONS:

FEATURES

Display:	2 vacuum fluorescent graphical displays, 16x140 pixels
Memories:	100 sequences of 100 registers plus system memories
Sweep Features:	Linear, octave, and decade of up to 10,000 points
Scanner Mode:	Allows scanning through a sequence of 100 stores
SINAD Meter:	Displays reading from -30dB to 0dB of SINAD
Freq. Counter:	Measures frequency error to 1 Hz in three counter modes
Battery Meter:	Displays charge left in batteries
Reverse Protection:	Generator output protected, switches into 100W internal load and automatically displays power in dBm or watts.
Power Meter:	Displays power from +23dBm to +50dBm, ± .5dB (200mW-100W)
Attenuator Output:	-30dB sample port from load for external equipment
RSSI Meter:	80dB of range on receiver side, -40dBm to -120dBm
Warranty:	One-year parts and labor with extended Ramsey Technical Support and dedicated COM3010 user forum access

GENERATE MODE

Frequency:	100kHz to 1.0GHz in 1Hz steps
Freq. Accuracy:	± 0.1ppm standard
RF Output Level:	-140dBm to 0dBm in 0.1dBm steps
Level Accuracy:	± 1dB, 500kHz to 1GHz, ±2dB 100kHz to 500kHz
Units:	dBm, uV, mV
Leakage:	Better than 1uV, 2 turn loop, 1" diameter at 1"
Spurious Harmonics:	-30dBc typical
Non-harmonics:	-50dBc typical
FM Modulation:	±75kHz max in 0.1Hz steps
FM Bandwidth:	0.1Hz - 75kHz
Accuracy:	± 0.1ppm (inherently tied to reference frequency)
AM Modulation:	0 - 75% in 1% steps to -100dBm, 0-50% to -140dBm
AM Bandwidth:	10Hz - 10kHz
Accuracy:	± 5%
Distortion:	Less than 5%
Modulation Internal:	0.1Hz - 3kHz
Modulation External:	0.1Hz - 3kHz digital and analog selectable, auto leveling.
CTS Encode:	0.1Hz to 999.9Hz at ±.75kHz default deviation, variable from .1Hz to 2kHz deviation
DPL Encode:	±.75kHz, all supported codes
Two Tone Paging:	0.1Hz - 3kHz, group, voice, tone, battery save modes

RECEIVE MODE

Frequency:	100kHz to 1.0GHz in 10Hz steps
Sensitivity:	Less than 2uV below 512MHz Less than 3uV above 512MHz
FM Demod:	0 - 6kHz, 0 - 4kHz
AM Demod:	0-100%
CTS Decode	In AF frequency count
Frequency Error:	0-1MHz, two methods of bargraph and count
AF Demod output:	1Vp-p for 7kHz deviation
Gates:	0.1 sec, 1 sec

FREQUENCY COUNTER

Frequency Range:	100kHz - 1GHz
Low Band Sensitivity:	Less than 10mV under 70MHz, 1Hz and 10Hz resolutions
High Band Sensitivity:	Less than 10mV, 70MHz - 1GHz, 10Hz and 100Hz resolutions with divide by ten prescaler
IF Frequency:	Receiver sensitivity, range limited to bandwidth of current set receiver frequency ±10kHz, 1Hz, and 10Hz resolutions

AUDIO COUNTER

Frequency Range:	60Hz - 3000Hz
Gates:	10 Sec variable gate for 1 sec quick updates
Sensitivity:	35mV at demod audio, (± 750Hz deviation)

GENERAL

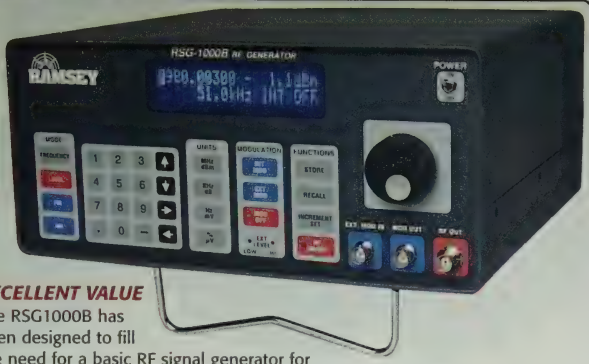
Receiver input:	Has diode protection and fused components
Controls:	Elastomeric keypad
Dummy Load:	100W 30dB feed-through attenuator with sample port on rear, 25% duty cycle full power
RS232 Control:	Serial interface provides external function control and automated calibration
Primary power:	100-240VAC, .6A, 50/60Hz; built in Li-Ion battery
Stand:	Standard push to lock handle/stand
Case Color:	Mist gray epoxy powder coat
Supplied Accessories:	110VAC EIA cord, BNC-BNC test cable, whip antenna, one BP3010 Li-Ion battery
Dimensions:	6" H x 11.9375" W x 14.75" D (152.4mm H x 303.31mm W x 374.65mm D)
Weight:	14 lbs (6.5kg)

COM3010 **Communications Service Monitor, 100kHz-1GHz** *(visit www.ramseytest.com for accys!)* **$3995.0**

RSG1000B RF Signal Generator

- ✔ 100 kHz to 1.1 GHz!
- ✔ 10 Hz continuous tuning
- ✔ AM & FM internal and external modulation
- ✔ 90 user setup memories
- ✔ RS232 interface
- ✔ 0.1ppm stability

A 1.1 GHz Professional RF Signal Generator At A Price That Can't Be Beat!



DETAILED SPECIFICATIONS *(at 0dBm output level)*

Frequency Range:	100kHz to 1.1GHz
Resolution:	10Hz continuous tuning, 100Hz above 1000MHz
Oscillator Frequency:	50MHz TCXO
Oscillator Stability:	±0.1ppm from 15°C to 35°C
Harmonics:	-30dBc typical, 1MHz–1100MHz
Non-Harmonics:	-50dBc typical
Residual FM:	5 Hz typical, 0.3 to 3 KHz detection BW
Residual AM:	-60dBc (>10KHz from carrier) 0.3 to 3 KHz detection BW
Output Level:	-130 to +10dBm (50 Ohms); Resolution: 0.1dB
Level Accuracy:	±1dB (>500 KHz)
Level Units:	dBm, dBmV, mV, dBµV, µV
Reverse Power Protect:	25 watts, 50 VDC
Leakage:	1µV (2 turn loop, 1 inch diameter, 1 inch distance)
FREQUENCY MODULATION	
Range:	0–99.9KHz in 0.1 KHz steps
Accuracy:	±5% of scale
Freq. Response:	50Hz to 15KHz
Max. Deviation:	99.9KHz; except 250 to 500MHz, 50KHz
AMPLITUDE MODULATION	
Depth:	0–75% in 1% steps <0 dBm
Distortion:	Less than 5%
Accuracy:	±5%
Freq. Response:	50Hz to 25KHz
Modulation Sources:	Internal 1KHz derived from reference. External – 600 ohm impedance with level LEDs to indicate correct 1 Volt p-p input level
Front Panel:	Sealed membrane with audio acknowledgment
Display:	Two line, vacuum fluorescent display
RS-232:	RS-232 interface provides polled readout plus downloading and uploading of all front panel setups
Memory:	90 full front panel set-ups. 9 series of 10 memories each. 10 year retention
External Timebase Input:	10MHz, 1 Volt p-p
Power Requirements:	90 to 230 VAC ±10%, 50/60Hz
Dimensions:	12"w x 6"h x 12"d
Weight:	11 lbs.

EXCELLENT VALUE

The RSG1000B has been designed to fill the need for a basic RF signal generator for design, development, and testing. We've included the performance and features you need every day, and priced it to let you equip every bench in your shop or classroom.

The broadband frequency range covers 100 kHz all the way to 1.1 GHz with 10Hz continuous tuning! 90 set-up memories are provided for custom user operations and saved settings to speed up your frequent tasks

RS232 CONTROL

The RSG1000B features an RS232 control interface. This interface supports polled readings plus download and upload of all setup memories.

ACCURATE AND STABLE

Frequency synthesis is referenced to an internal 0.1ppm 50MHz timebase. This timebase is STANDARD equipment with the RSG1000B!

COMPACT SIZE

At 12" x 6" x 12" and 11 lbs., the RSG1000B is suitable not only for bench use but for mobile applications and as a field service tool or local oscillator.

EASY TO USE

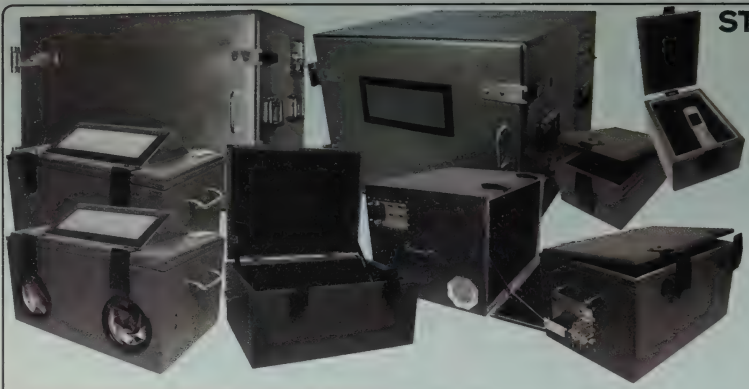
The display is a bright blue vacuum fluorescent display you can read from across the room, and it displays all operating parameters. A numeric membrane keypad enables direct entry of all values. All functions are accessible without using a "shift" or second function key for real ease of use. We have also incorporated a "smart knob" which has analog feel, but is intelligently enabled when entering or changing parameters in any field.

COST EFFECTIVE!

We designed the RSG1000B with the casual user in mind who demanded professional features at a hobbyist price. We encourage you to compare the RSG1000B to any of the "other guys". Take a close look and compare your needs and performance to the dollars you will spend. You'll see immediately that the RSG1000B offers the best cost-performance value available today.

As one of our satisfied customers stated, "With the RSG1000B I get 90% of the performance of a $20,000 RF generator for 10% of the price; it's really a no brainer". If you are looking for a cost effective solution to your RF signal generator requirements, we're sure the RSG1000B will fit the bill!

tSG1000B **RF Signal Generator, 100 kHz to 1.1 GHz, 0.1ppm Timebase** **$1995.00**



STE RF Shielded Test Enclosure

- ✔ Wireless device testing!
- ✔ Perfect for 802.11a, b, g, n
- ✔ Cellular, PCS, GSM, 3G testing
- ✔ Bluetooth®, RFID, ZigBee testing
- ✔ Wide variety of I/O options are "standard"!
- ✔ Super isolation up to 18 GHz!
- ✔ RF radiating test fixture models for absolute repeatability testing of wireless devices!
- ✔ Stock models to fit your custom applications

Trust YOUR RF Testing To Our Proven Patented Design!

THE RF SCREEN ROOM ON YOUR BENCH!

In 1997 Ramsey took the technician out of the large expensive shielded screen room and put his hands and eyes into a portable benchtop RF Shielded Test Enclosure. With thousands placed in service worldwide the patented STE technology became the standard for efficient and cost effective RF isolation testing. That legacy has continued with a wide variety of STE's to suit every RF test application and the size requirements you have today. Our exclusive double lip gasket technology assures an RF tight seal each and every time. Steady-hold hinges maintain the opening at any location and prevent gasket compression due to prolonged closure pressure when not in use. Our STE2800 and STE3800 STE's feature our RTF Radiating Test Fixture with a built-in broadband antenna to properly test wireless telephones with guaranteed repeatability. All of the STE's feature a wide variety of available I/O connection and interface options and RF filtered feed-throughs. All available to fit your custom requirements with the pricing and delivery of a stock unit!

STE2200

The "Portable Test Box" or STE2200 evolved from its big brother the STE3000B. Designed specifically for TDMA, CDMA, AMPS, PCS, GSM and other small communication devices, it is constructed to the same precision-machined tolerances as our patented STE3000B to maintain an exceptionally well shielded environment. Heavy duty, rugged .090 and .125 aluminum is used throughout and our double lip, high performance gaskets are used at all joint locations assuring a reliable RF tight closure. Oversized hinges and latches are used to provide a physically tight seal every time. RF absorbent foam lines the interior to provide a typical RF attenuation of -90dB @ 3GHz! Perfect for 2.4GHz testing. Input/output connections and options can be configured to match your needs.

STE2800

Designed around the STE2200, we took the task of repeatability testing of TDMA, CDMA, AMPS, PCS and GMS phones, and other wireless communications to a new level! For more than a decade Ramsey's RTF Radiating Test Fixture was the standard in pager testing and alignment. Now, designed specifically for such communications devices, the RTF has a built-in embedded antenna to cover 800 MHz to 8 GHz.

A heavy duty universal clamp system allows any phone to be securely clamped into position for testing. Once clamped in, the flat coupling response, together with the high RF Isolation factor, gives you guaranteed repeatability testing. Phone to phone, the measurements will be exact, and will be taken under the identical conditions. An SMA connector is provided standard on the STE2800 for the RTF antenna connection. Other I/O connector options may be ordered separately.

STE3000B

The RF Test Enclosure that started it all! How do you troubleshoot, tune, align, and test a device in an RF free and interference free environment? Well, up until now you had to invest in a very expensive RF screen room. Our patented STE3000B brought that technology right down to your bench, and the cost all the way down to affordable!

Now you can work and see inside the box rather than sit inside an expensive screen room. Working access is made possible with our custom designed silver impregnated, ultra fine mesh gloves. These gloves offer an RF tight seal to the box yet give you excellent manual dexterity and hands on access to devices under test. Once the cover is closed, a large RF tight viewing window overlooks the entire working area that is illuminated with built-in noise free incandescent lighting. It doesn't get much easier than that! All I/O connections and options are milled into a removable 304 stainless steel panel to allow for future changes. Simply choose the I/O's and interfaces you require when ordering, and the STE3000B will be custom designed to your spec. Sounds too good to be true? We thought so too; that's why we have a patent on it!

Put An RF Isolated Screen Room On Your Bench!

STE3300

Designed from the ground up to be functional, fast, and convenient for the design, production, testing, and maintenance of wireless LAN, Bluetooth, and other microwave frequency applications. Durability is assured because the STE3300 is constructed of rugged .090 and .125 aluminum with dual heavy-duty latches.

Unmatched RF isolation is achieved by the use of the two rows of high performance flexible RF gaskets. The entire interior is lined with RF absorbent foam that provides 24dB reflective attenuation to eliminate nulls and hotspots. The inside working space is large enough to test your devices as a complete system or use multiple enclosures to eliminate interference between work stations. A large variety of connector options are available for specific customer applications. All connectors are milled into a removable 304 stainless steel panel to allow for future requirements when needed.

STE3500

Designed specifically for Wireless Communications circuit board production testing where there is a need for a large footprint for isolating oversized boards and minimal height to allow for easy device placement. The lid opens automatically using the internally mounted dual precision air pistons once the dual heavy duty latches are released.

Construction meets the same standards as our popular STE3300 and incorporates the same double gasketed lid to provide the highest attenuation factor at the best value. The I/O panel is located close to the bottom of the rear panel to keep the cabling as close to the device under test as possible. All connectors are milled into a removable 304 stainless steel panel to allow for future requirements when needed.

STE3800

If you are looking for the ultimate enclosure for TDMA, CDMA, AMPS, PCS, GMS, P2T, PDA, and other wireless communications devices the STE3800 is the enclosure for you. The STE3800 is configured with a built-in Ramsey RTF Radiating Test Fixture to give you flawless go/no-go testing with guaranteed repeatability.

It is designed around the STE3300 to give you a whopping 5½"H x 15¼"W x 9¼"D inside working space. The RTF provides a broadband coupling response from 800 MHz all the way up to 8 GHz. The heavy duty universal clamp system positions and holds the device under test in an exact position that can be easily duplicated for repeatability. Because frequent tests require the operator to visually inspect the device display (cell phone, PCS phone, etc.), the STE3800 features a large RF tight viewing window that overlooks the entire working area. The entire display and any indicators, LED's etc. located on the device can easily be seen throughout the test process!

Double thickness 24dB RF absorbent foam lines the entire work area for a flat response. As with the STE3300, double row RF gaskets are used to provide RF isolation up to -90dB at 4GHz. A Type-N female connector is provided standard for the RTF antenna connection, and is located on the removable 304 stainless steel I/O panel that can be custom configured with any available I/O options.

STE4400

High performance RF test enclosure specifically engineered for the production floor! Designed to the same exacting specifications of the STE3300, the STE4400 offers a unique swing-down front door opening for easy device placement and removal. Easily accommodates a laptop computer to fit any test application.

Extra deep work space accommodates the largest devices. Like the STE3300, your custom I/O configuration is milled into a removable 304 stainless steel panel to allow for future requirements when needed, giving you off the shelf delivery of your custom order!

STE5000

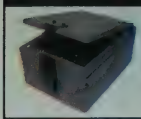
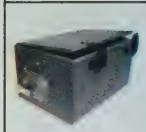
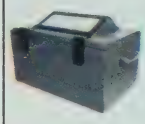
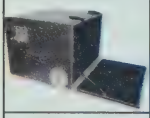
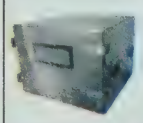
The STE 5000 enclosure represents a breakthrough in RF shielded enclosure design and value. The enclosure is roomy enough to hold even 19" rack sized instruments and provides -110dB of shielding, enabling one to test anywhere in your facility!

The box is constructed of type 304 stainless steel and lined with microwave absorbent foam. Our unique double lip gasketed closure maintains maximum shielding while allowing a full 24" X 18" opening. Heavy-duty hinges and latches plus interior bracing insures the physical integrity of the enclosure. RF attenuation is -110 dB at 1GHz, and -80dB at 18GHz! A 3.5" x 6" precision machined removable 304 stainless steel panel has been integrated into the design of the enclosure. Also available with our exclusive RF Tight illuminated viewing window in the STE5100.

YOU NAME IT...

AMPS, CDMA, TDMA, PCS, GSM, 3G, RFID, PDA, ZigBee, Bluetooth®, 802.11a, b, g, n, PCMCIA, USB, QNC, WiFi, WiMAX, WLAN, P2T, Flex®, Reflex®, POCSAG, Golay...

WE'VE GOT YOU ISOLATED!

	MODEL	DESCRIPTION	CONNECTORS	ISOLATION	DIMENSIONS	PRICE
	STE2200	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Easy release handle • Steady-hold hinge • Designed for compact devices	None provided standard. Custom configured, see options below.	-100dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	4½"H x 7¼"W x 9¾"D 3¼"H x 6"W x 8½" D (Nom. Inside Dimensions)	$439.0
	STE2800	• Integral RF radiating test fixture (RTF) • Flat Coupling Factor 800MHz - 8 GHz • Provides absolute repeatability testing • Exclusive double lip RF tight gasket • RF absorbent foam liner • Easy release handle • Steady-hold hinge	SMA to built-in RTF antenna provided standard. Additional connectors available, see options below.	-100dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	4½"H x 7¼"W x 9¾"D 3"H x 6"W x 8½" D (Nom. Inside Dimensions Above RTF)	$959.0
	STE3000B	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connector interface plate • RF tight "hands-on" silver mesh gloves • RF tight illuminated viewing window • Gas filled cover strut • Designed for hands-on adjustment and alignment of devices	6 pole filtered 120VAC AC outlet strip; 6 pole filtered barrier strip feedthrough. Custom configured, see options below	-90dB @ 1GHz -90dB @ 3GHz -80dB @ 6GHz	12¾"H x 18"W x 12"D 8"H x 16¾"W x 10½"D (Nom. Inside Dimensions)	$1,095.0
	STE3300	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connecter interface plate • Easy release latch system • Steady-hold hinge system • Designed to test complete systems	None provided standard. Custom configured, see options below	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9¾"H x 18"W x 12"D 8¼"H x 16¾"W x 10¾"D (Nom. Inside Dimensions)	$829.0
	STE3500	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connecter interface plate • Easy release latch system • Dual gas filled cover struts • Designed to test complete systems	None provided standard. Custom configured, see options below	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9"H x 22"W x 17"D 8½"H x 18¾"W x 15¾"D (Nom. Inside Dimensions)	$1,095.0
	STE3800	• Integral RF radiating test fixture (RTF) • Flat Coupling Factor 800MHz - 8 GHz • Provides absolute repeatability testing • RF tight illuminated viewing window to see device displays and indicators • 1" RF absorbent foam liner for a flatter response • Exclusive double lip RF tight gasket • Universal I/O connecter interface plate	Type-N to built-in RTF antenna provided standard. Additional connectors available, see options below.	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	9¾"H x 18"W x 12"D 5½"H x 15¼"W x 9¼"D (Nom. Inside Dimensions Above RTF)	$1,995.0
	STE4400	• RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connector interface plate • Large hinge-down front door • Designed for your own test fixtures	None provided standard. Custom configured, see options below	-90dB @ 2GHz -90dB @ 4GHz -80dB @ 6GHz	15½"H x 22½"W x 19"D 14¼"H x 21¼" x 17½"D (Nom. Inside Dimensions)	$1,595.0
	STE5000	• Designed for full size and rack mounted equipment testing • RF absorbent foam liner • Exclusive double lip RF tight gasket • Universal I/O connector interface plate • Large sturdy stainless construction	None provided standard. Additional options below	-110dB @ 1GHz -100dB @ 3GHz -95dB @ 6GHz -80dB @ 18GHz	19"H x 25"W x 25"D 17½"H x 23½"W x 23½"D (Nom. Inside Dimensions)	$3,495.0
	STE5100	• RF tight illuminated viewing window to see device displays and indicators • Large sturdy stainless construction • Designed for full size and rack mounted equipment testing with visual displays	None provided standard. Additional options below	-110dB @ 1GHz -100dB @ 3GHz -95dB @ 6GHz -80dB @ 18GHz	19"H x 25"W x 25"D 17½"H x 23½"W x 23½"D (Nom. Inside Dimensions)	$3,995.0

RF Shielded Test Enclosure Ordering Information

CUSTOM CONFIGURATION OPTIONS

RF Feedthrough:	BNC, TNC, SMA, SMB, UHF, Type-N
Fiber Optic:	Fiber optic bulkhead feedthrough
Dust Covers:	Dust cover caps with security chains available for all RF feedthrough connectors
RF Filtered Data:	DB9 (100pF), DB9 (1000pF), DB15 (820pF), DB15 (1000pF), DB25 (1000pF), DB37 (1000pF), RJ45/DB9 Filtered, RJ11/DB9 Filtered, USB/DB9 Filtered
Power Connections:	4-Pole filtered power strip, 6-Pole filtered power strip, surge protected power strips
Ventilation Options:	Dual side mounted RF filtered vents with single filtered exhaust muffin fan
RF Safety Inhibit Option:	Provides RF relay to automatically switch circuit to internal load when cover is opened
RF Absorbent Foam:	Standard ½" thick RF absorbent foam liner provides 24 dB attenuation. 1" thick foam is standard on the STE3800 and available as an option to provide a flatter response
Fiber Transceiver:	Opticom USB 2.0 Fiber Transceiver System available for devices up to 480 Mb/s

Note: RF Isolation specs are measured at 1M with terminated RF feedthrough coaxial connectors installed. Actual isolation & attenuation can be affected by adding additional filtered and non-filtered connectors. Check with Ramsey for specific connector specifications.

STE ORDERING INFORMATION WORKSHEET

1. Select STE model series.

2. Determine what RF Feedthrough Connectors are required and quantity desired:

- ❒ BNC female
- ❒ TNC female
- ❒ SMA female
- ❒ SMB female
- ❒ UHF female
- ❒ Type-N female
- ❒ Fiber Optic Feedthrough
- ❒ Other _____

3. Determine what RF filtered data connections are desired:

- ❒ DB9 (100pf)
- ❒ DB9 (1000pf)
- ❒ DB15 (820pf)
- ❒ DB15 (1000pf)
- ❒ DB25 (1000pf)
- ❒ DB37 (1000pf)
- ❒ RJ11/DB9
- ❒ RJ45/DB9
- ❒ USB1.0 & USB1.1/DB9
- ❒ Other _____

4. Determine what bulkhead terminal connections are desired:

- ❒ 4-Pole filtered barrier strip
- ❒ 6-pole filtered barrier strip
- ❒ Inside surge protected 110VAC outlet strip
- ❒ Other _____

5. Determine what other special options may be desired:

- ❒ RF safety inhibit interlock
- ❒ Ventilation
- ❒ Lighting
- ❒ Viewing window
- ❒ Additional RF absorbent foam
- ❒ Fiber transceiver for high speed data (USB2.0, etc.)
- ❒ Other _____

IMPORTANT!

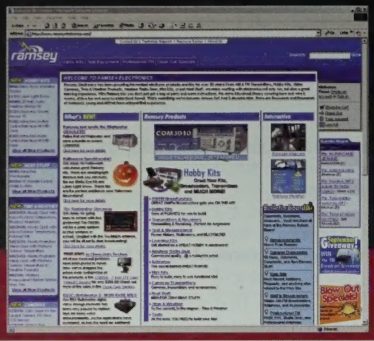
STE series I/O interfaces, connectors, and options are frequently updated. If you don't see what you're looking for, there is a good chance it has already been added to available options!

Give us a call, or visit www.ramseytest.com

6. Call our friendly service representatives to work-up your configuration! 800-446-2295 or 585-924-4560

RAMSEYKITS.COM

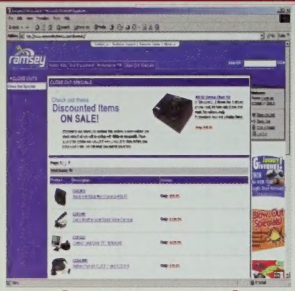
Shop online at www.ramseykits.com
Call Toll Free 800-446-2295



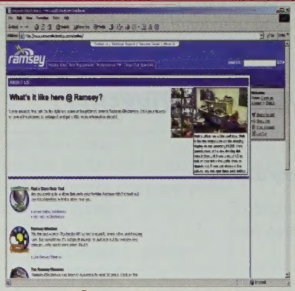
✔ Specials!
✔ Giveaways!
✔ User Interaction
✔ Downloads
✔ Live Feeds
✔ Much Much More!

You Won't Believe The Special Deal And Really Neat Stuff At

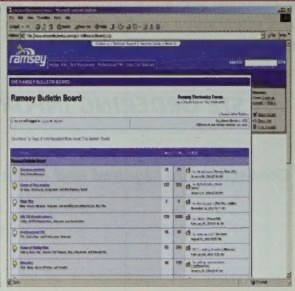
www.ramseykits.com



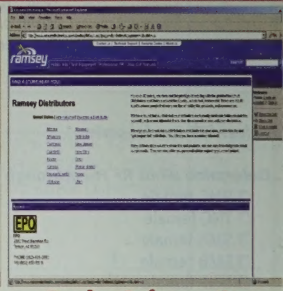
Clearance Specials
Save BIG BUCKS!



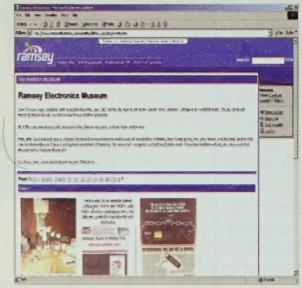
About Ramsey!
Learn MORE Than You Want!



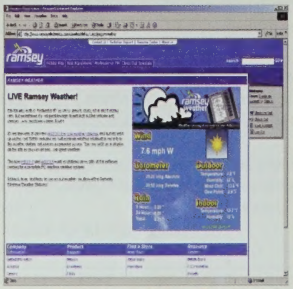
User Forum!
YOU Are The Author There!!



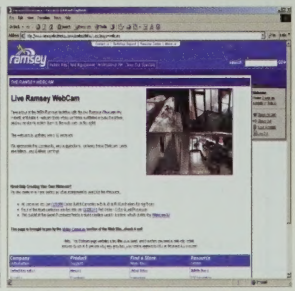
Dealer Information
Find a Dealer Near YOU!



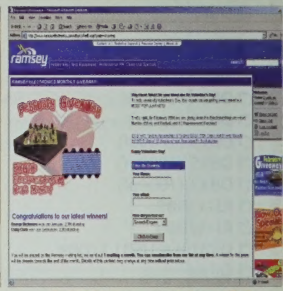
Ramsey Museum
The History of US! Yikes!



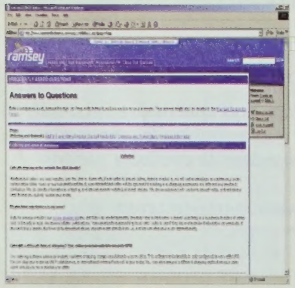
Ramsey Weather
Our Local Weather Display!



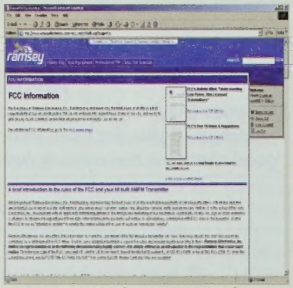
LIVE Webcams!
Watch Us LIVE 24/7!



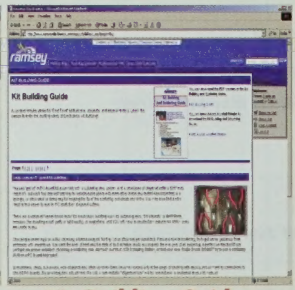
WIN Every Month!
Register To WIN!



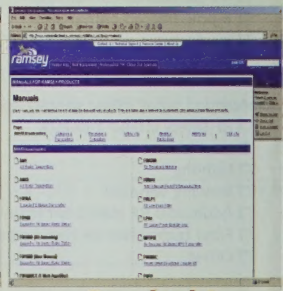
FAQ's
All The Answers You Need!!



FCC Reference Info
Operational Guidelines!



Kit Building Guides
How To Build A Kit!



Downloads!
Kit Manuals, Software...More!

PRODUCT INDEX

4 in 1 robot 58
Air band monitor receiver 48
Air pressure sensor 18
Air Zinger robot car 60
Aircraft receiver 49, 50
Aircraft receiver lighting controller 49
AM radio IC learning course 76
AM radio learning lab 67
AM Transmitters 5
AM/FM radio IC learning course 76
AM/FM radio learning lab 67
AM/FM RF preamplifier 46
Amphibious solar vehicle 59
Antennas-Active 92
Antennas-PC board 91
Antennas-Signal Magnet 92
Antennas-telescopic whip 91
Antoid Bug 59
Atomic clock 83
Atomic weather projector clock 83
Atomic wristwatch 84
Audio amplifier 2x30 watt 26
Audio amplifier 7 watt 26
Audio amplifier subminiature 26
Audio generator-pocket 28
Audio mixer-amplifier 13
Audio power amplifier 13
Audio Vu meter-pocket 28
Auto turning frog 56
Battery conditioner charger 88
Beamster emergency light 68
Bell learning lab 67
Binary Player robot 60
Bullshooter-II voice storage 6, 28
Cable polarity checker 45
Cable tracer 89
CAD CD electrolab 62
Capacitance inductance meter 88
Cassette deck 15
CD/Cassette player/recorder 14
CD/MP3 player 14
Chemistry lab 63
Chemistry super lab 63
Chime multi tone 29
Coaxial cable tester 89
Code practice oscillator 55
Cola clock 62
Colinear vertical FM antenna 8
Communications service monitor 96
Computemp binary thermometer 23
Cricket sensor 29
Cross fader 12
Crystal radio learning lab 67
Cube video transmitter 78
CW keyer 55
DC motor speed controller 41
DJ audio mixer 12
Doppler direction finder 54
Dripping faucet 43
DTMF controller interface 32
DTMF tone decoder 44
ECG heart monitor 42
ECG heart monitor patches 42
Ecology lab 63
Electric circuits lab 62
Electroluminescence 16, 81
Electronics learning lab 64-66
Electronics learning lab-Snap Circuits 72-75
Energy lab 62
Fiber optic cable 70
Fiber optics cutter 70
Fiber optics learning kit 69, 70
Fiber optics learning videotape 70
Fiber optics splice kit 70
Fiber optics tool kit 70
Fiber optics voice/Data learning kit 70
Flying Saucer-Snap Circuits 71
FM broadcast amplifier 7
FM broadcast receiver 50
FM low pass filter 7
FM radio-portable 46
FM radio-Snap Circuits 71
FM stereo transmitters 3-5
Foxhound direction finder 54
Gearbox-2 in 1 61
Gearbox-selectable 61
Guitar headphone amp 30
Hexapod monster 56
Hydrazoid alien 57
Hyper Line Tracker 58
Ion generator 40
IR 15 channel receiver 36
IR 15 channel transmitter 35
IR 2 channel receiver 35
IR audio control interface 33
IR digital control interface 33
IR LED sensor 36
IR light barrier alarm 34
IR remote dimmer 35
IR stereo volume control 35
IR switch control interface 33
IR Thermometer 80
IR video camara illuminator 78
IR wired repeater 34
IR wireless remote repeater 34
Jungle robot 57
Knight Invader turbo car 59
Laser beam communicator 21
Laser light show 21
Laser trip sensor 37
Laser wireless trip sensor 37
LCD message board 22
LCR temperature multimeter 90
Lead acid battery charger 88
LED 3D Christmas tree 17
LED 4 player quiz 25
LED 7 segment display 24
LED animated ghost 16
LED bargraph meter 28
LED blinky 43
LED blinky switcher 46
LED Blinky-Eyes display 16
LED Christmas tree 17
LED digital clock 22
LED digital panel meter 24
LED dual electronic dice 25
LED electronic roulette 25
LED flashing flag pin 81
LED holiday bell display 17
LED keychain lights 81
LED message wand 24
LED personal animated badge 81
LED pumpkin display 16
LED rolling clock display 24
LED rolling message display 24
LED Santa display 17
LED shaking electronic dice 25
LED SMT blinky 20
LED SMT Christmas tree 17
LED SMT multicolor blinky 20
LED SMT smiley face 25
LED SMT snowman pin 17
LED strobe light 20
LED temperature sensor 39
LED traffic signal 25
LED wheel of fortune 25
Light actuated switch 45
Light beam communicator 21
Line tracking mouse 56
Liquid level controller 38
LPFM station in a box 10
LPFM transmitter 50W 9
Magnifiers 95
Metal pipe & wire detector 38
Microprocessor controller timer 39
Microwave motion detector 37
Model rocket transmitter 51
Moon Walker II 57
Motion detector-Snap Circuits 71
Motor learning lab 67
Multimeters 90
Music doorbell-Snap Circuits 71
Music lights 22
Music recorder-Snap Circuits 71
Oscilloscope-hand held 86
Phone patch mixer 6
Physics lab 63
Pic Pro PIC chip programmer 89
Plasma generator 40
Power cost controller 80
Power supply 110VAC/12VAC 5
Power supply 110VAC/12VDC 5
Power supply 16VAC 40
Power supply 18VDC 26
Power supply 1A regulated 46
Power supply 1A symmetric 46
Protolab circuit simulator software 86
QRP amplifier 53
QRP receiver 52
QRP transmitter 52
R/C car learning kit 68
Radio electronics lab 62
Rat blaster varmint repeller 30
RF actuated relay 45
RF broadband preamplifier 87
RF linear power amplifier 8
RF power meter 87
RF preamplifier 46
RF receiver preamplifier 55
RF remote control system 80
RF wireless link module 44
Robotic arm trainer 57
Robotic rink 60
Robotics elementary course 61
Robotics teachers guide 61
Robotics teachkit course 61
Rockit robot 57
Roly Poly robot 60
SCA subcarrier decoder 50
Security bit set 95
Shortwave converter 47
Shortwave LF converter 53
Shortwave radio learning lab 67
Shortwave receiver 47
Signal generators 85, 97
Siren module 43
SMT soldering course 69
SMT tools 95
Sniff-It RF probe 87
Soccer Pro robot 58
Solar deluxe training course 68
Solar generator briefcase 42
Solar lab 63
Solar panel battery 59
Solar powered car 59
Solar training course 68
Solar trickle charger 42
Solder 95
Solder sucker 95
Soldering fume extractor stations 93
Soldering learning kit 69
Soldering stations 93, 94
Soldering stations-lead free 94
Soldering tips 93, 94
Sound reversing car 56
Soundtracker car 59
Space Battle-Snap Circuits 71
Speaker DC protector 30
Speakerphone 31
Speech scrambler/descrambler 51
Speedy speed radar gun 23
Spider III robot 58
STE shielded test enclosure 100
Stepper motor driver 40
Stereo Ear stereo amp 28
Stereo headphone amp 27
Stereo super headphone amp 27
Stereo transmitter companion 7
Sumo robot 56
Super snoop amplifier 43
Tachometer-digital 38
Talking alarm clock 68
Telephone amp 31
Telephone learning kit 68
Telephone recorder controller 31
Telephone ring down 32
Temperature controller 39
Temperature sensor module 38
Temperature sensor-remote 39
Tickle stick 43
Tone encoder/decoder 44
Tone Grabber reader 32
Touch switch 45
TriBotz robotic car 57
Tri-Field meter 23
Tru-Match FM antenna 8, 92
Turbo 2000 car 59
Turbo 3000 car 60
Ultrasonic parking radar 36
Ultrasonic radar module 36
Universal start/stop timer 45
Universal timer 43
Van deGraaf discharge wand 41
Van deGraaf generator 41
VHF receiver 53
Video camera-bullet 77
Video camera-lipstick 77
Video quad switcher 79
Video sequential switcher 78
Video time lapse recorder 79
Video TV transmitter 78
Volcano lab 63
VOX voice switch 43
Walking electronic bug 29
WAO Kranius robot 58
Warble alarm 43
Watch dog 29
Water alarm 45
Weasel robot 56
Weather station-wireless 82
Wind speed anemometer 84
WWV time receiver 47
Yagi antennas 91

Your One-Stop Electronics Shop For Over Three Decades!

- ✔ Electronic Hobby Kits
- ✔ Electronic Mini Kits
- ✔ AM/FM Broadcasters
- ✔ LPFM Transmitters
- ✔ Transmitters & Receivers
- ✔ Amateur Radio Gear
- ✔ Robotics
- ✔ Educational Kits
- ✔ Learning Kits
- ✔ Video Cameras & Transmitters
- ✔ Time & Weather
- ✔ Really Neat Stuff
- ✔ Tools & Accessories
- ✔ Professional RF Equipment
- ✔ Much More!

Super-Pro FM Stereo Radio Station

Our #1 kit for years! Build yourself an FM radio station complete with a mixer and multi channel inputs!
(See page 4)

from **$269.95**

Bullshooter-II Digital Recorder

Records up to 8 minutes digital voice storage multiple segmen Digital readout c plays status. Built mic and line inp make it ideal for a audio applicati
(See page

from **$69.9**

20 Watt Miniature Audio Amp

One of the neatest audio amplifier designs ever! Delivers 20W from a single SMT package. The super efficient class D design requires no heatsink!
(See page 26)

from **$69.95**

Robotic Line Tracking Mouse

Uses photo interrupters track a black line you ma with a marker or ta Crazy to watch, make t most intense "cours you can imagine and will follow it to find target! Kids love the
(See page

from **$34.9**

Radio Controlled Car Kit

Build the Turbo King R/C speedster from the ground up and learn all about R/C transmitters, receivers, and vehicles! 7 remote control functions.
(See page 68)

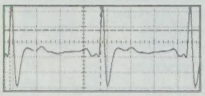
from **$32.95**

Fiber Optic Voice & Data Kit

A practical learning designed to tea how audio and da are transmitted a received over fib optic cable! Bu your own set a communicate back and forth over fib
(See page

from **$20.9**

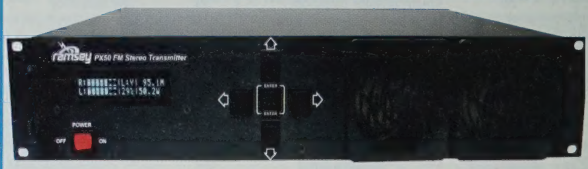
ECG Electrocardiogram Heart Monitor



Provides both visible and audible display of your heart rhythm just like in the hospital...or on the TV shows! The comprehensive manual not only explains the inner workings of the heart but the theory and step-by-step assembly of your ECG monitor kit. Amaze your physician with your knowledge of ECG/EKG systems by building and owning your own! Uses reusable professional probe patches.
(See page 42)

from **$44.95**

50 Watt LPFM Stereo Transmitter



The fool-proof watt LPFM ster transmitter that h become the sta dard for licens LPFM statio FCC Certified unc parts 2, 73, and as well as Indus Canada BETS-6 assure you stay on-the-air. All operational parameters are automatically monitored and p tected providing auto-soft fail and power reduction modes on errors with automatic resto tion when cleared. All of this in a compact two rack-unit package that runs reliable and co 24/7, just as your station should! For the ultimate in reliability, check out the PX
(See page

only **$1995.0**

ramsey

www.ramseykits.com
800-446-2295

RAMSEY ELECTRONICS INC.
590 Fishers Station Drive
Victor, New York 14564
Phone (585) 924-4560

To change your address or unsubscribe from this catalog, or to request additional copies of this catalog, please visit www.ramseykits.com/catalog or call or write us.

Electronic Kits Are Fun!

- ✦ Build It!
- ✦ Learn It!
- ✦ Achieve It!
- ✦ Enjoy It!

PRSRT STD
US POSTAGE PD
KENT OH
PERMIT #15

Make sure to include your key code when ordering!

YOUR KEYCODE IS:RMH2501
**********SCH 5-DIGIT 0601
PHIL ACCARDI
7 DOMINIQUE LANE 1
SIMSBURY CT 06070-1623

Over 150 New And Exciting Kits & Products for 2006!